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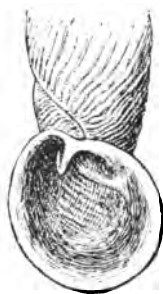
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3.

W. J. Webb, del. ad nat.

Garratt & Walsh, sculpt.

Clausilia evae, n. sp.

12

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THE

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EDITED BY

WILFRED MARK WEBB, F.L.S.,

Technical Laboratories, County of Essex,

With the assistance in special departments of :—

The Rev. A. H. Cooke, M.A., F.Z.S., King's College, Cambridge.

Lieut.-Col. H. H. Godwin-Austen, F.R.S., etc., Shalford Park, Guildford.

Charles Hedley, F.L.S., Australian Museum, Sydney, N.S.W.

S. Pace, F.Z.S., Royal College of Science, London.

E. R. Sykes, B.A., F.Z.S., Grays Inn, London.

B. B. Woodward, F.L.S., F.G.S., British Museum (Natural History),
London.

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THE JOURNAL OF MALACOLOGICAL

No. 1.

MARCH 25th, 1896.

VOL. V.

SOME NEW MARINE MOLLUSCA FROM TANGIER.

By GEORGE W. CHASTER, M.R.C.S.

BEFORE proceeding to describe the shells referred to in the title of this paper, it may not be out of place to describe briefly how they came into my possession. About two years ago my friend Mr. H. Sidebottom, being engaged in the study of the Foraminifera, requested his relative, Mr. C. H. Nevill, of Bramall Hall, Cheshire, who was about to join a Mediterranean cruise, to bring back bags of anchor-mud and dredgings from the various places touched at. Other dredgings from the Adriatic and from a second cruise made last year were also obtained. These collections of material were with great readiness placed at my disposal to be examined for mollusca. Their range extends from Tangier to Smyrna, including many localities in the Mediterranean, Adriatic, Gulf of Corinth, and Aegean Sea. Although the quantity of material was comparatively small, the bags of dredgings weighing but a few pounds each, over two hundred species have been obtained therefrom. As might be expected these are almost all minute in size, there being hardly any measuring over half-an-inch. Amongst them, however, are many of considerable rarity and a few apparently new. To my friend the Marquis of Monterosato I must express my sincere thanks for the unfailing courtesy and readiness with which he has examined and identified the various forms, often after laborious search.

The material from Tangier consisted of a bag of dredgings from about seven fathoms, and a quantity of shore sand brought on board for the purpose of deck-scrubbing!

Amongst other noteworthy forms are *Rissoa parvula*, *R. fischeri* and *R. turricula* of Jefferys, *Marginella guancha*, d'Orb. *Rissoa (Altidia) spinosa*, Monts., as well as the forms described below.

***Coeum cuspidatum* (Monts., MSS.), *sp. nov.*, Pl. I, Fig. 4.**

Shell comparatively long and slender, slightly curved, glossy, pellucid, sculptured with numerous but obscure lines of growth; the diameter increases very slightly and gradually towards the mouth; septum much produced in the form of a cone with slightly concave sides, ending in a fine point, and not deviating to either side; mouth not thickened by an annular rib. Length, 2.5 mm.

Several specimens of this species were found both in the dredgings and shore drift. One other species (undetermined) of the genus was met with.

Retrotortina*, *gen. nov.

Shell minute, coiled in a left-handed direction, spire depressed, mouth nearly circular, umbilicus large. The species for which I suggest this genus is interesting, representing as it does the sinistral (or probably far more correctly, pseudo-sinistral) form of a series of which *Skenea* and *Homalogyra* are respectively the dextral and planospiral members. The progressive diminution in size is also noteworthy, for *Retrotortina* is even more minute than *Homalogyra*.

***Retrotortina fuscata*, *sp. nov.*, Pl. I, Figs. 5 and 6.**

Shell minute, left handed, brown in colour, glossy, marked with numerous lines of growth; whorls, two, convex; suture, deep; spire nearly flat; mouth almost circular, somewhat oblique; umbilicus very large. Diameter, .5 mm.

A few specimens from shore drift. Unfortunately no live examples occurred, consequently until the operculum can be examined it must remain a matter of some slight uncertainty whether the shell is pseudo-sinistral or sinistral. The other members of the family found were *Skenea planorbis*, Fabr. and its var. *maculata*, Jeff., *S. pellucida*, Monts., and two species of *Homalogyra*.

***Pherusa carinata*, sp. nov., Pl. I., Fig. 3.**

Shell sub-cylindrical, rather thin, white, semi-transparent and glossy; sculpture consisting of very strong, sharp, spiral ridges of which there are four on the body whorl, three on the penultimate, and two on the second and third volutions, the nucleus being smooth and polished; of these ridges the uppermost is the strongest; whorls six, rather convex, shouldered above by the prominent keel; suture well defined, spire long; apex blunt and rounded; mouth somewhat oval, narrow above and dilated below; outer lip slightly angulated by the upper ridge, receding very much at its upper part, expanded below, the basal part being excavated by a wide shallow sinus; pillar lip somewhat oblique, reflected; umbilical chink narrow. Height, 1.8 mm. Breadth, .75 mm.

A single specimen from shore drift. The present species is interesting, affording as it does an example of a *Pherusa* with sculpture closely approximating to that so frequent in the typical *Aclis*. The characters of this species in other respects are those of the well-known *P. gulsonae*, Cl., which was also found in the same material. The only other member of the same family met with was the common species which Jefferys described as *Odostomia minima*, for which species and the closely-allied but quite distinct *Jeffreysia cylindrica*, Jeff., Monterosato proposes the sub-genus *Cima*, a separation with which I entirely concur.

***Cyclostrema pruinoseum*, sp. nov., Pl. I., Fig. 2.**

Shell sub-globose, whitish in colour, dull and frosted in appearance, owing to the entire surface being covered with very numerous, fine, close-set, flexuous striae following the direction of the lines of growth; on the umbilical area and adjoining part of the base there are also numerous, much stronger spiral lines, finely granulated by the striae just described; whorls two-and-a-half, convex; suture very distinct though not deep; spire but little raised; mouth nearly circular; outer lip thin, presenting two shallow sinuations, one at the periphery and one below; umbilicus rather large; operculum like that of *C. nitens*. Height, .85 mm. Breadth, .6 mm.

This species was very abundant in the dredgings, many of the specimens still containing the animal. The only species for which it could be well mistaken is *C. nitens*, Phil., from which it

differs in its smaller size, lustre-less and striated surface, basal as well as umbilical striae, and much larger umbilicus.

Cyclostrema fenestratum, *sp. nov.*, Pl. I., Fig. 1.

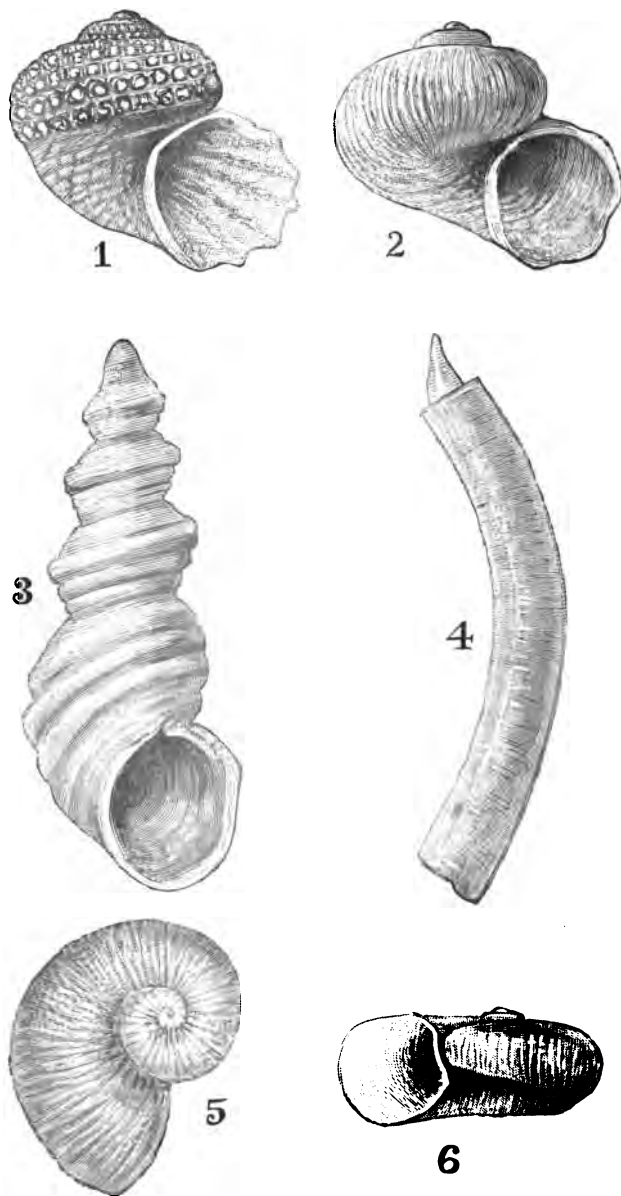
Shell globosely conical, rather solid, white; sculpture, numerous, slightly oblique, longitudinal, raised lines, of which there are about thirty on the body whorl, these are crossed by stronger spiral lines (six on the last half of the body whorl), of which the uppermost is some distance from the suture, and the lowest and strongest bounds the umbilical area; the intercrossing of these lines leaves squarish interspaces; whorls three, very convex, spire raised; suture deep; mouth circular (outer lip broken); umbilicus large, fluted by the closely crowded longitudinal lines. Height, .8 mm. Breadth 1 mm.

A single specimen dredged. This species occupies a position in some respects intermediate between *C. areolatum*, G. O. Sars, and *C. exilissimum*, Phil., two forms at first sight very unlike. The former it approaches in shape, though the sculpture of the Tangier shell is much coarser. This surface decoration however in its characters very closely resembles that of *C. exilissimum*, although it is finer, both the longitudinal and spiral lines being more numerous: the shell is, of course, very different in shape from Philippi's species. Another species described by Philippi, the fossil *Delphinula ? elegantula* apparently differs only in having the longitudinal lines finer and closely crowded not giving rise to any decussation.

The *Cyclostremata* are well represented in the Tangier material, for, besides this species described, there occurred *C. nitens*, Phil., *C. cutlerianum*, Clark, *C. serpuloides*, Montg., *C. catenoides*, Monts., and *C. exilissimum*, Ph.

In conclusion, I must express my thanks to the courteous editor, Mr. Wilfred Mark Webb, for the care he has bestowed upon the accompanying plate.

SOUTHPORT, March 7th, 1896.



W. J. Webb del. ad nat.

B. D. Rudd & Son sculpt.

- (1) *Cyclostrema fenestratum*. (2) *Cyclostrema pruinosum*. (3) *Pharus carinata*.
 (4) *Coecum cuspidatum*. (5 & 6) *Retrotortina fuscata*.
 (Enlarged.)

•

BIBLIOGRAPHY.*

The Bibliography has been undertaken by Mr. E. R. Sykes and Mr. S. Pace; the sections dealing with Systematic (and Recent Faunal) work being more especially controlled by Mr. Sykes, while Mr. Pace has paid special attention to the Anatomical and Palaeontological Sections. Communications for these columns are welcomed from our readers, and will be gladly inserted if found suitable.

In this compilation an effort has been made, not so much to compete with publications of the nature of the Zoölogical Record, as to give our readers some general idea of the works and papers recently issued.

With a view to the saving of valuable space, the sections have been numbered, and cross references are denoted by the numbers only.

I. CLASSIFICATION AND NEW FORMS.

A. RECENT FORMS.

Ancey, C. F.—"On some new or hitherto little known Land Shells from New Guinea or adjacent Islands." *Proc. Linn. Soc. N.S.W.*, vol. x., part 2, pp. 374-381, pl. xxvi.

Bernard, F.—"On a new Lamellibranch (*Scioberetia australis*) commensal with an Echinoderm." *Ann. Mag. Nat. Hist.*, ser. 6, vol. xvii., pp. 109-10 (transl. from *C. R. Ac. Sci.*, cxxi., pp. 569-71).

Brot, A.—"Description de deux Mélanies nouvelles." *Journ. de Conch.*, vol. xlii., pp. 473-5, pl. ix, pars, Nov., 1895.

M. crawfordi from the Transvaal and *M. leefei* from Tongatabu.

Chaster, George W.—"On the Variation of *Stilifer turtoni*, Brod." *Journ. of Conch.*, vol. viii., p. 176.

We fear that the varietal names will not prove of much service.

Dall, W. H.—"On some new species of *Scala*." *Naut.*, vol. ix., ppp. 111-2.

Dautzenberg, Ph.—"Révision des espèces actuellement connues du genre *Geotrochatella*." *Journ. de Conch.*, vol. xliii., pp. 19-26, pl. v., Feb., 1896.

Five species are chronicled of this East-Asiatic genus, of which two are newly distinguished.

Drouet, Henri.—"Unionidae nouveaux ou peu connus." *Journ. de Conch.*, vol. xliii., pp. 26-40, Feb., 1896.

Several new and unfigured species.

Fulton, Hugh.—"A list of the species of *Amphidromus*, Albers, with critical notes and descriptions of some hitherto undescribed species and varieties." *Ann. Mag. Nat. Hist.*, ser. 6, vol. xvii., pp. 66-94, pls. v.-vii., Jan., 1896.

*An asterisk denotes that the work has not been seen. The bibliography is carried up to March 1, 1896.

Generic reviews are the bricks of which the fabric of such works as the "Manual of Conchology" are constructed, and they are therefore always welcome. Mr. Fulton has done his work with great care and accuracy, though we could wish that some of the twelve varieties of *A. adamsi* were absent. We must confess to being unable to distinguish between the varieties *subunicolor* and *articulata*. Still, since we have been unable, after an examination of the paper, to discover an omitted recent species, we have to tender our thanks for a good piece of work, both as regards letterpress and plates. Might not, however, the word "recent" have occurred in the title, as we find no mention of such Tertiary species as *Bul. ellipticus*, Sow., which have been referred to this group?

Joubin, M. L.—"Céphalopodes recueillis dans l'estomac d'un Cachalot, capturé aux îles Açores." *Compt. Rend.*, vol. cxxi., no. 22, pp. 1172-4, fig.

Jousseau, Dr.—"Description de Coquille nouvelle." *Le Naturaliste*, ser. 2, no. 215, p. 43.

A new *Lusionella* from Aden.

Kobelt, Dr. W.—"Systematisches Conchylien-Cabinet." Band I., heft cxxix., lief 417, 1895 (contains *Helix*, pp. 795-802, pls. 219-224).

Kobelt, Dr. W.—"Systematisches Conchylien-Cabinet." Band I., heft cxxx., lief 418, 1895 (contains *Cerithium*, pp. 161-200, pls. 31-36).

Lahille, F.—"Contribucion al estudio de las Volutas Argentinas." *Revista del Mus. de la Plata*, vol. vi., pp. 295-332, 12 plates.

This, were it not for the very disproportionate amount of new varietal names, would be a most valuable paper. The plates illustrate the variation of the species exceedingly well, and show various stages of growth. The following species of Volutas are recorded from Argentina: *fusiformis*, Kiener; *colocynthis*, Chemn. = *brasiliensis*, auct.; *angulata*, Swainson; *ancilla*, Solander; *oviformis*, n. sp.; *tuberculata*, Wood; *magellanica*, Chemn.; *ambigua*, n. sp.; and *paradoxa*, n. sp.

Locard, A.—"A propos de l' *Helix variabilis*." *L' Ech., Rev. Linn., Ann.* xi., p. 98.

Locard, A.—"Une Physse Portugaise nouvelle." *L' Ech., Rev. Linn., Ann.* xi., p. 109.

Martens, E. von.—"Neue Land und Süsswasser Schnecken aus Ost-Afrika." *Nach. Mal. Ges.*, 1895, pp. 175-187.

Forty-two unfigured new species!

Martens, E. von.—"Mollusken von Paraguay." *SB. Ges. Naturf. Fr. Berlin*, 1895, pp. 33-5.

Martens, E. von.—"Verarbeitetes Conchylienstück aus Neuguinea." *SB. Ges. Naturf. Fr. Berlin*, 1895, pp. 35-8, fig.

Martens, E. von.—"Ostafrikanische Achatinen." *SB. Ges. Naturf. Fr. Berlin*, 1885, pp. 145-6.

Martens, E. von.—"Neue Arten von Landschnecken aus den gebirgen Ost-Afrika." *SB. Ges. Naturf. Fr. Berlin*, 1895, pp. 120-9.

New species of *Cyclophorus*, *Ennea*, *Helicarion*, *Vitrina*?, *Trochonanina*, *Helix*, *Buliminus*, and *Subulina*.

Martens, E. von.—"Neue *Buliminus* aus Sud-Arabien." *SB. Ges. Naturf. Fr. Berlin*, 1895, pp. 129-30.

Möllendorff, Dr. O. F.—"Pilsbry's neue Eintheilung der Heliciden." *Nach. Mal. Ges.*, 1895, pp. 169-175.

Pilsbry, H. A.—"Description of a new Australian *Chiton*." *Naut.*, vol. ix., p. 90.

Chiton bednalli, from South Australia.

Pilsbry, H. A.—"The earliest publication of *Dorcasia*, Gray." *Naut.*, vol. ix., p. 108.

Mr. Pilsbry points out that this group was first described in 1838, and not in 1845, as usually supposed.

Pilsbry, H. A.—"On the names of certain Subgenera of *Helicostyla*." *Naut.*, vol. ix., p. 108.

Dolichostyla and *Opalliostyla* are proposed to replace *Prochilus* and *Eudoxus*, both of Albers and both preoccupied.

Pilsbry, H. A.—"The Aulacopoda: a primary division of the Monotremate Land Pulmonata." *Naut.*, vol. ix., pp. 109-111.

A character such as the presence or absence of the pedal groove seems, without further distinction, to be an insufficient ground on which to base the creation of a "super-family"; and we fear that the criticism which Mr. Pilsbry applies to those who have made use of the tail pore for the separation of families will be shortly applied to his use of the pedal groove.

Pilsbry, Henry A.—"Sculpture of the apical whorls, a new character for distinguishing groups of *Bulimuli*." *Naut.*, vol. ix., pp. 112-5.

Naturalists are at last becoming aware of the extreme importance of the apical whorls in systematic work, as these are formed before external influences have their full power, and we congratulate the author on his use of the sculpture.

Pilsbry, H. A.—Manual of Conchology, ser. 1, part 62 (contains vol. xvi., pp. 49-112, pls. 17-31); ser. 2, part 38 (contains vol. x., pp. 49-96, pls. 16-25). Philadelphia, Nov., 1895.

The present part in the marine series is almost entirely occupied with a review of the genus usually known as *Aplysia*, but which Mr. Pilsbry replaces by *Tethys*, Linn., 1758 [non Linn. 1767, nec auctores sequentes]. The point on which this change turns, therefore, is whether the 10th or 12th Edition of Linné's work is to be the starting point, and general opinion now inclines to the 10th. It would seem to be a pity to have created a sub-family Aplysiinae, as the use of *Tethys* as a foundation for the name would be better. It must be confessed that to the general student this entire group fails to attract and has been much neglected, probably owing to the insignificant shell; we trust that this work may stimulate their study.

It is impossible to seriously criticise the work done in the land series—as indeed it is in almost all the parts—owing to the fact that one sees but a small portion of the work relating to the *Bulimi*, without possessing the key to the whole. Suffice it to say that this part concludes the study of *Thaumastus* and contains the commencement of the review of the family Bulimulidae. In this Mr. Pilsbry first considers the genus *Plekocheilus*, which he divides into *Plekocheilus* s. str., having a wrinkled or malleate surface and a smooth spire, and into *Eurytus*, in which the shell is generally granulate or striate. The first two pages of the genus *Auris*, Spix, conclude the part.

The following are new species in the marine series:—*Aglaja nuttalli* (p. 50), *Tethys panamensis* (p. 88), and *T. robertsi* (p. 99).

Pilsbry, H. A.—"Preliminary Outline of a New Classification of the Family Muricidae." *Amer. Natural.*, xxx., 69-71, 1896.

Quadras, J. F., and Moellendorff, O. F.—"Diagnoses specierum novarum ex insulis Philippinis." *Nach. Mal. Ges.*, 1896, pp. 1-15.

We decline to catalogue these supposed new species, all unfigured and but briefly described in Latin, with in general no comparisons. This habitual practice on the part of such distinguished authors is most strongly to be reprobated.

Rochebrune, Dr. A. S.—"Monographie des formes jusqu'ici connues. appartenant au genre *Ceratosoma*." *Nouv. Arch. du Mus.*, ser. 3, vol. vii., pp. 119-136, pl. vi.

- Roper, Edward W.—"Notes on the Washington *Sphaeria* and *Pisidia*, with descriptions of new species." Naut., vol. ix., pp. 97-9.
- Sowerby, G. B.—"Description of a new species of *Opisthostoma*." Ann. Mag. Nat. Hist., ser. 6, vol. xvii., p. 94.
O. linterae, from Sarawak.
- Stoll, A.—Zur Zoogeographie der landbewohnen Wirbellosen. Vierteljahrs. Naturf. Ges. Zurich, 1895, pp. 289-316, 2 pl.
Includes a discussion on the distribution of *Clausilia*.
- See also Crosse (IV. A), Nobre (IV. A), and Smith (IV. A).

B. FOSSIL FORMS.

- Beushausen, L.—[See IV. B: "Lamell. rhein. Devon."]
The following new genera:—*Carydium*, *Conocardiopsis*, *Crassatellopsis*, *Opisthocelus*, *Prosochasma*; and *Prosoleptis* and *Tancrediopsis*, new sub-genera. Many new species.
- Boettger, O.—"Neue Funde tertiärer Landschnecken bei Offenbach a. M." Nachrbl. Deutsch. malak. Ges., 1896, pp. 16-19.
Spiraxis ? *bickhardtii*, n. sp.
- Bonarelli, G.—"Il Gen. *Paroniceras*, Bonar. (1893)." Bull. Soc. mal. Ital., xix., pp. 225-38, pl. iv., 1895.
P. buckmani, n. sp.
- C. (Iarke), J. M.—[Rev. of Wiman's paper on *Conularia* (Bull. geol. Upsala, 1895).] Amer. Geol., xvii., p. 119, 1896.
- Fucini, A.—[See IV. B: "Fauna calc. M. Pisano."]
The following new species of Mollusca are described:—*Diotis pisana*, *Perna martini*, *Myoconcha etrusca*, *Cardita pseudoteträgona*, *Neomegalodon etruscus*, *Cardium italicum*, *C. pisanum*, *Pleurotomaria stefanii*, *P. etrusca*, *P. anconai*, *Hamusina gemmellaroi*, *Scaevola pisana*, *Trochopsis ausonium*, *Trochus mario*, *T. nerii*, *T. fuchsi*, *T. zitteli*, *T. (Auseria, n. sg.) pseudonustus*, *T. (A.) acropterus*, *T. (A.) splendidissimus*, *Neritopsis bosniaskii*, *Holopella* ? *problematica*, *Natica fatorum*, *Palaeoniso enzo*, *Chemnitzia pisana*, *C. etrusca*, *C. ugo*, *C. inops*, *C. julianensis*, *C. canavarii*, *C. achiardii*, *Microschiza sordida*, *Oonia siavis*, *Loxonema liasica*, *Zygopleura stefaniana*, *Z. acuta*, *Z. velata*, *Fibula juliana*, *Nautilus pisanus*, *P. subjulianus*. The generic name *Juliania* is proposed for *Pustularia*, Koken (non Swains.).
- Maas, G.—[See IV. B: "Die unt. Kreide. . ."]
The following new species of Mollusca are described:—(A) Neocomian: *Pleurotomaria subhercynica* (?), *Turbo reticularis*, *Trochus undulato-striatus*, *T. ewaldi*, *Turritella striata* (?), *T. gersdorfensis*, *Cerithium pseudophilipsii*, *Corbula laevis*, *Tellina (Arcopagia) subhercynica*, *Psammobia carinata*, *Venus seveccensis*, *Crassatella subhercynica*, *Lucina subhercynica*, *Cardium ewaldi*, *Nucula ewaldi*, and *Cucullaea gersdorfensis*. (B) from the Gault: *Ancylloceras variabile*, *Panopaea zechi*, *P. subhercynica*, *P. carinata*, *P. ewaldi*, and *Trigonia roelligiana*. Most of the new forms are figured.
- Mayer-Eymar, C.—"Descriptions de Coquilles fossiles des terrains tertiaires inférieurs (suite)." J. Conchyl., xliii., pp. 40-54, pls. ii-iv.
The following new species:—*Corbis bellardii*, *Turritella aegyptiaca*, *Mesalia hofana*, *M. oxyreps*, *Fusus (Clavellites) spinosus*, *Tudicula aegyptiaca*, *T. umbilicaris*, *Turbinella frequens*, *Melongna nilotica*, *Pleurotoma ingens*, *Pereiraea beyrichi*, and *Voluta (Volutolyria) arabica*.
- Parona, C. F.—[See IV. B: "Fauna strati con *Posidonomya*."]
The following new species are described:—*Lytoceras meletense*, *Oppelia subtilicostata*, *Oecotraustes minor*, *Cadomoceras nepos*, *Sphaeroceras pilula*, *S. auritum*,

S. (?) disputabile, *Stephanoceras gibbum*, *S. rotula*, *S. venetum*, *Reineckia sansonii*, *Parkinsonia bonarellii*, *Morphoceras dimorphoide*, *Perisphinctes conclusus*, *P. torquis*. *P. perspicuus*, and *Limex (?) lata*. Other apparently new species are figured without name.

Regny, P. *Vinassa de.*—[See IV. B: "Moll. terz. Alpi venete."]

The following new species:—*Arca oppenheimi*, *Cardium postalense*, *Tellina bayaniana*, *Ampullina postalensis*, from Mte. Postale; *Arca recurvicosta*, *A. hilarionis*, *A. cobellii*, *A. ristorii*, *Hemicardium hilarionis*, *Cardita pachydonta*, *Crassatella (?) tricarinata*, *Tellina hilarionis*, *Pecten nicolosi*, *P. bonarellii*, *Spondylus (?) sesquispinatus*, *Ostrea hystrix*, *Patella gregorioi*, *P. pyramidalis*, Mgh. Mss., *P. stygis*, Mgh. Mss., *Turbo fucinii*, *T. grecot*, *T. (?) d'achiardii*, *Nerita canavarii*, *Niso fallax*, *Adeorbis acuticosta*, Mgh. Mss., *A. septemcarinata*, *Xenophora splendida*, *Hipponyx flexuosus*, *H. striatus*, Mgh. Mss., *H. corrugatus*, Mgh. Mss., *H. spinelli*, Mgh. Mss., *Bayania (?) nuda*, Mgh. Mss., *Turritella catanii*, *T. (?) babylonica*, *Mesalia disputata*, *Ovula globosa*, *Erato ritae*, *Pyrula gradata*, *Ficula spinelli*, Mgh. Mss., *F. elongata*, *Oliva palladii*, Mgh. Mss., *Cancellaria margaritata*, *Pleurotoma sinuodulosa*, *P. marinellii*, *Raphitoma biserialis*, Mgh. Mss., *Bulla spinellii*, Zitt. Mss., and *Helix moduloides*, Mgh. Mss.

Tiessen, E.—[See IV. B: "Subhercyne Tourtia."]

The following new species of Mollusca:—*Janira johannis-boehmi*, *Pleurotoma tourtia*, *P. ewaldi*, *P. Ingimontana*, *Solarium ornato-dentatum*, *S. bicarinatum*, *Turbo tricinctus*, *T. impar*, *T. pseudocarinatus*, *T. subhercynicus*, *Trochus tourtia*, and *Turritiles jaskeli*.

Tommasi, A.—[See IV. B: "Fauna Trias inf."]

The following new Molluscs:—*Pecten (Chlamys ?) tellinii*, *Avicula taramelli*, *Posidonomya haueri*, *Gervillia meneghinii*, *Mytilus anonymus*, *Anoplophora stellata*, *Psammocoencha servini*, and *Pleurotoma (Cryptoenia) sansonii*. Other supposed new species are also figured without name.

Vincent, E.—"Contribution a la paléontologie de l'éocène belge. Note préliminaire sur *Crassatella*." Pr. Verb. Soc. mal. Belg., 1895, pp. clx-xx.

The following new species:—*C. (Pseuderiphylla) cossmanni*, *C. (Ps.) erratica*, and *C. (Ps.) wemmelensis*, G. Vine. Mss.

Weissermel, W.—"Beitrag zur Kenntniss der Gattung *Quenstedticeras*." Zeitschr. Deutsch. geol. Ges., xlvii., pp. 307-30, pls. x-xii., figs., 1895.

Woods, H.—"The Mollusca of the Chalk Rock: Part I." Quart. J. Geol. Soc., lii., pp. 68-98, pls. ii.-iv. Bibl., Tables.

The following new species:—*Ptychoceras smithi*, *Trochus schluteri*, *T. berocscirensis*, *Turbo geinitzi*, *Cerithium cuckhamiense*, *C. saundersi*, and *Dentalium turoniense*.

See also **Matthew (IV. B)**, and **Oppenheim (IV. B)**.

II. ANATOMY, HISTOLOGY, DEVELOPMENT AND PHYSIOLOGY.

—"The Aptychus." Nat. Sci., viii., p. 84, Feb., 1896.

Notice of Dr. R. Michael's discovery of a specimen of *Oppelia steraspis* having in its interior some 60 young shells, each of which, as well as the adult, is closed by an aptychus (Zeitsch. Deutsch. geol. Ges., xlv., pp. 697-702, pl. liv.).

Amadrut, A.—"Etude comparative de la masse buccale chez les Gastéropodes et particulièrement chez les Prosobranches diotocardes." C. R. Ac. Sci., cxi., pp. 1170-2.

***Babor, J. F.**—"Über das Centralnervensystem von *Dreissensia polymorpha*." S. B. böhmisch Ges., xlviii.

- Bernard, F.**—"Sur quelques stades du développement du *Scioberetia australis*, Nob., Lamellibranche à Coquille interne." Bull. Mus. Paris, i., pp. 275-7, fig., 1895.
- Boutan, L.**—"Recherches sur le Byssus des Lamellibranches." Arch. Zoöl. exp., s. 3, vol. iii., pp. 297-338, pls. xiii.-xiv, 3 figs., 1895.
- Carazzi, D.**—"Fagocitosi e diapedesi nei lamellibranchi." Monit. Zoöl. Ital., vi., pp. 249-56, 1895.
- Dall, W. H.**—"New Data on *Spirula*" [Rev. of Huxley and Pelseneer's "Challenger" Report]. Science, N.S., vol. iii., pp. 243-6.
- Dr. Dall, in this very valuable critical note, suggests from a study of a nearly perfect specimen in the U.S. National Museum, that *Spirula*, "while not unable to swim, is in general sedentary," living attached by an aboral sucker to stones, &c., in abyssal depths; and that the exposure of the shell in the Challenger and some other specimens, instead of being normal, as Pelseneer states, is really the result of the forcible pulling away of the *Spirula* from its perch by predacious deep-sea fish.
- Garstang, W.**—"The Chromatophores of Animals." Sci. Prog., iv., pp. 104-31, Bibl., 1895.
- Haller, B.**—[Rev. of Pelseneer's "L'hermaphroditisme chez les Mollusques" (Arch. Biol., xiv., 33)]. Zoöl. Centralbl., ii., pp. 776-7, 1895.
- Haller, B.**—"Beiträge zur Kenntniss der Morphologie von *Nautilus pompilius*" (Zoöl. Forschungsreisen in Australien, &c., vol. v.). Denk. Ges. Jena, vol. viii., 18 pp., 2 pls., 2 figs.
- Jacobi, A.**—"Anatomische Untersuchungen an malayischen Landschnecken (*Amphidromus chloris* und *Amphidromus interruptus*." Arch. Naturg., lxi., pp. 293-318, pl. xiv., Bibl., 1895 (1896).
- Joubin, L.**—[See I. A : "Cephalop. rec. dans l'estom. d'un Cachalot."]
Among the remarkable forms obtained, especial attention may be called to *Lepidoteuthis grimaldi*, n. sp., the tail of which is covered with large rhombohedral scales reminding one of those of some ganoid fishes.
- Kopsch, F.**—"Das Augenganglion der Cephalopoden." Anat. Anz., vol. xi., pp. 361-9, 3 figs.
- Korschelt, E.**—[Rev. of Schmidt on Development of Stylommatophora (Zoöl. Jahrb. Anat., viii.).] Zoöl. Centralbl., ii., pp. 778-81, 1895.
- Korschelt, E.**—[Rev. of Sigerfoos' paper on Development of Pholadidae (Johns Hopk. Univ. Circ., no. 119).] Zoöl. Centralbl., iii., pp. 18-9, 1896.
- Korschelt, E.**—[Rev. of Erlanger's "Etudes dév. Gastrop. pulm." (Arch. Biol., xiv., pp. 127-).] Zoöl. Centralbl., iii., p. 116, 1896.
- Korschelt, E.**—[Rev. of Erlanger's paper on the Origin of the Mesoderm in *Paludina* (Morphol. Jahrb. 22).] Zoöl. Centralbl., ii., pp. 777-8, 1895.
- Newbigin, M. J.**—"The Pigments of Animals." Nat. Sci., viii., pp. 94-100, Feb., 1896.
- Pelseneer, P.**—"Prosobranches aériens et Pulmonés branchifères." Arch. Biol., xiv., pp. 351-93, pls. xiv.-xviii., 1895.
- Plate, L. H.**—"Bemerkungen über die Phylogenie und die Entstehung der Asymmetrie der Mollusken." Zoöl. Jahrb. Anat., ix., pp. 162-206, 19 figs., Bibl.
- Ruprecht, R.**—"Physiologische Untersuchungen an *Eledone moschata*." Zeitschr. Naturw., vol. 68, pp. 280-4, 1 fig., 1895.
Review of paper by O. Uexküll in Zeitschr. Biol.
- Simroth, H.**—[Abstract of "Die Gastropoden der Plankton-Expedition" (see Bibl. in No. 4).] Zoöl. Centralbl., iii., pp. 19-29, 1896.

- Simroth, H.—"Ueber die einfachen Farben im Tierreich." Biol. Centralbl., xvi., pp. 33-51, 1896.
- Sterki, Dr. V.—"Some Notes on the Genital Organs of Unionidae, with Reference to Systematics." Nautilus, ix., pp. 91-4, 1895.
- Thiele, J.—"Ueber die Verwandtschaftsbeziehungen der Amphineuren." Biol. Centralbl., xv., pp. 859-69, Bibl., 1895.
- Maintains that the *Solenogastres* are not Mollusca and must be separated from the Chitons.
- Vayssi re, A.—"Etude zoologique de l'*Ovula* (*Neosimnia*) *spelta*, L., et du *Conus mediterraneus*, Brugui re." J. Conchyl., xliii., pp. 5-18, pl. i.
- Vernon, H. M.—"The Respiratory Exchange of the Lower Marine Invertebrates." J. Physiol., xix., 18-70, 13 figs.
- The following Mollusca were experimented upon:—*Tethys*, *Pterotrachea*, *Cymbulea*, and *Octopus*.

III. BIOLOGY, HABITS AND TERATOLOGY.

- Bernard, F.—"On a new Lamellibranch (*Scioberetia australis*) commensal with an Echinoderm." Ann. Nat. Hist., s. 6, xvii., pp. 109-10 (transl. from C. R. Ac. Sci., cxxi., pp. 569-71).
- Bouvier, E. L.—"Le Commensalisme chez certains Polypes madr poraires." Ann. Sci. nat., s. 7, vol. xx.
- Note (pp. 23-30) on the commensalism of *Kellia deshayesi* with *Heteropsammia* and the associated *Aspidosiphon*.
- Boycott, A. E.—"On Shell-Coloration in British Extra-Marine Mollusca." Zoologist, s. 3, xx., pp. 62-70, 1896.
- Cockerell, T. D. A.—"Sinistral *Patula strigosa*." Naut., vol. ix., p. 108.
- Crowther, H.—"Protective resemblance of shell of *Helix cantiana*, Mont., to its surroundings." J. Conch., viii., p. 161, 1896.
- Hartlaub, C.—"Die Polypen und Quallen von *Stauridium productum*, Wright, und *Perigonopus repens*, Wright." Zeitschr. Wiss. Z  l., vol. lxi., pp. 142-62, pls. vii.-ix., Dec., 1895.
- Association of the Hydrazo n *P. repens* with *Nucula nucleus* at Heligoland.
- Keyes, C. R.—"A gigantic Orthoceratite from the American Carboniferous." Science (n.s.), iii., pp. 94-5.
- Specimen of *O. fanslerensis* probably over 6 ft. long.
- Lancelev e, Th.—"Sinistrosit  de l' *Helix pomatia*." Bull. Soc. Sci. Nat., d' Elbeuf, Ann. 1894, p. 13.
- Packard, A. S.—[Rev. of Kew's "Dispersal of Shells" (Int. Sci. Series, London, 1893).] Science (n.s.), iii., pp. 207-8, 1896.
- In this somewhat belated review Packard calls attention to two cases omitted by Kew—(a) the introduction into North America of *H. hortensis*, (b) the extreme and rapid variation of *H. nemoralis* in Lexington, Va., since its comparatively recent introduction.
- Post, E. J.—"Plover caught by a *Pinna*." Naut., vol. ix., p. 107.
- Strode, W. S.—"The size of Mussels." Naut., vol. ix., pp. 115-6.
- Wetherby, A. G.—"New Records of reversed American Helices." Naut., vol. ix., p. 94.
- Wright, C. E.—"*Helix hortensis*, Monst., *sinistrorsum* in Northamptonshire." Journ. of Conch., vol. viii., p. 151.

IV. DISTRIBUTION AND FAUNA.

A. RECENT FORMS.

Adams, Lionel E.—"*Physa acuta* at Ostend." Journ. of Conch., vol. viii., p. 176.

Andrews, Mrs. Geo.—"Shells of Thunderhead Mt., N.C." Naut., vol. ix., p. 120.

[Bowell, E. W. W., and Bazely, E. H.]—"British Land and Freshwater Shells, Part III." Devonian, vol. i., part iii., pp. 64-73, figs.

Byne, L. St. George.—"The Marine Mollusca of Teignmouth Bay: Additions." Journ. of Conch., vol. viii., pp. 162-7.

Caziot.—"Faune Malacologique terrestre et fluviatile du departement de la Vienne." Feu. Jeun. Nat., ser. 3, no. 303, pp. 54-5.

Clapp, Geo. H.—"*Vitrina limpida* in Western Pennsylvania." Naut., vol. ix., pp. 94-5.

Cockerell, T. D. A.—"California Slugs." Naut., vol. ix., p. 120.

Crosse, H.—"Faune Malacologique terrestre et fluviatile de la Nouvelle-Calédonie et de ses dépendances (suite et fin)." Journ. de Conch., vol. xlii., pp. 333-473, pl. ix.-x., Nov., 1895.

This completes the important study by Mr. Crosse of the New Caledonian Fauna. He describes a shell, previously considered to be a variety of *Helicina porphyrostoma*, under the name of *H. rossiteri*. Also *Helix pomatia* is recorded as an acclimatised species; this must, however, be a slip for *H. aspersa*, since the authorities he quotes refer to this latter species only. The entire land and freshwater fauna is said to comprise 361 species—an enormous number considering the extent of the islands. A table of the geographical distribution of the species amongst the islands concludes this very instructive paper.

Dautzenberg, Ph.—"Campagne de la Melita, 1892. Mollusques recueillis sur les cotes de la Tunisie et de l'Algérie." Mem. Soc. Zool. France, vol. viii., pp. 363-73.

Farrer, Capt. J. W.—"Notes on the Land and Freshwater Mollusca of the English Lake District." Journ. of Conch., vol. viii., pp. 151-161.

Fra Piero (Pietro Arbanasich).—"La Enumerazione dei Molluschi della Sardegna." Boll. Soc. Mal. Ital., vol. xix., pp. 263-78.

Deals with the Cephalopods and Pteropods.

Gardner, A. H.—"Dredging in Long Island Sound." Naut., vol. ix., pp. 119-120.

Hedley, C.—"Considerations on the Surviving Refugees in Austral Lands of Ancient Antarctic Life." Ann. Nat. Hist., s. 6, vol. xvii., pp. 113-20.

Henderson, John B.—"Notes of a Conchologist in Japan." Naut., vol. ix., pp. 85-7.

Henderson, John B.—"Notes on collecting Shells in China." Naut., vol. ix., pp. 100-1.

Herdman, W. A.—The ninth Annual Report of the Liverpool Biology Committee and their Biological Station at Port Erin, Liverpool, 8^{vo}, 1896, pp. 60.

We welcome the Annual Report of this Society, which has hardly yet received the support it merits.

Lameere, A.—"Manuel de la Faune Belgique, Partie I. Animaux non Insectes." Bruxelles, 1895, 12^{mo}.

This volume contains a brief account of the Belgian Molluscan Fauna.

- Melville, J. Cosmo, and Standen, Robert.**—"Notes on a collection of shells from Lifu and Uvea, Loyalty Islands, formed by the Rev. J. and Mrs. Hadfield, with list of species" (concluded). *Journ. of Conch.*, vol. viii., pp. 129-132.
- Monaco, Albert, Prince de.**—"Sur la deuxième campagne scientifique de la *Princesse-Alice*." *C. R. Ac. Sci.*, cxxi., pp. 1109-13, 1896.
- Nobre, Augusto.**—"Mollusques et Brachiopodes du Portugal." *Ann. Sci. Nat.*, Porto, an. 3, no. 1, pp. 1-8.
Contains the Cephalopods, Pteropods and the commencement of the Gastropods.
- Oldham, Chas.**—" *Limax cinereo-niger* in Cheshire." *Journ. of Conch.*, vol. viii., p. 151.
- Oldham, Chas.**—" *Agriolimax agrestis* v. *albida*, Picard, in Cheshire." *Journ. of Conch.*, vol. viii., p. 151.
- P[il]sbry, H. A.**—" *Lepidopleurus* in New Zealand." *Naut.*, vol. ix., p. 108.
- Pruvot, G.**—"Coup d'oeil sur la Distribution Générale des Invertébrés dans la Région de Banyuls (Golfe du Lyon)." *Arch. Zool. exp.*, s. 3, vol. iii., pp. 629-58, 1895.
- Raeymaekers, D.**—"Etudes sur la Faune Malacologique du Bas-Escaut: Disparition de *Alderia scaldiana*, Nyst." *Proc. Verb. Soc. Mal. Belg.* 1895, pp. cl.-clv.
M. Raeymaekers concludes that the species is extinct in the brackish waters of Belgium.
- Randolph, P. B.**—"Shells of Seattle, King Co., Washington." *Naut.*, vol. ix., pp. 101-2.
- Sargent, H. E.**—"Annotated list of the Mollusca found in the vicinity of Clearwater, Wright Co., Minnesota." *Naut.*, vol. ix., pp. 87-90.
The first portion of this faunal list deals with the terrestrial Mollusca, and enumerates 38 species.
- Saville-Kent, W.**—"Observations on the Marine Fauna of Houtman's Abrolhos Islands, Western Australia." *Rep. Brit. Assoc.*, 1895, pp. 732-3.
Contains notes on *Ostrea* and *Meleagrina*.
- Scharff, Dr. R. F.**—"Zur Molluskenfauna der Schweiz." *Nach. Mal. Ges.*, 1895, pp. 191-3.
- Scott, Thomas.**—" *Xylophaga dorsalis* in the Firth of Forth." *Ann. Scott. Nat. Hist.*, no. 17, Jan., 1896, p. 63.
- Smith, Edgar A.**—"Notes on some Land Shells from Vanbu, Tonkin, with descriptions of two new species." *Ann. Mag. Nat. Hist.*, ser. 6, vol. xvii., pp. 128-130, Feb., 1896.
A new *Camaena* and *Pterocyclos*.
- Sterki, Dr. V.**—"Small land Mollusca from New Mexico." *Naut.*, vol. ix., p. 116.
- Suter, H.**—"Corrections et Additions à la Liste synonymique et bibliographique des Mollusques terrestres et fluviatiles de la Nouvelle-Zélande." *Journ. de Conch.*, vol. xlii., pp. 476-7.
- Taylor, Rev. G. W.**—"Preliminary Catalogue of the Marine Mollusca of the Pacific Coast of Canada, with notes upon their distribution." *Trans. Roy. Soc. Canada*, ser. 2, vol. i., pp. 17-100.
This very interesting faunal catalogue includes five Brachiopoda, 67 land and freshwater Molluscs, and 279 marine Mollusca. The Nudibranchiata are omitted, since, as Mr. Taylor tells us, they have not yet been systematically studied in Canada. One great advantage students of this fauna possess over

those in these islands is that the nomenclature has not been burdened with a mass of names for indistinguishable varieties. May it long remain so!

Vanatta, E. G.—"The geographic distribution of *Planorbis umbilicatus*." Naut., vol. ix., p. 117.

White, Mrs. G. W.—"Collecting in Southern California." Naut., vol. ix., pp. 102-4.

—"The Marine Zoölogy, Botany and Geology of the Irish Sea: Third Report of the Committee." Rep. Brit. Assoc., 1895, pp. 455-67.

See also **Ancey (I. A)**, **Gregorio (IV. B)**, **Lahille (I. A)**, **Martens (I. A)**, **Packard (III.)**, **Quadrans (I. A)**, and **Roper (I. A)**.

B. FOSSIL FORMS.

Beushausen, L.—"Die Lamellibranchiaten des rheinischen Devon mit Ausschluss der Aviculiden." Abh. Preuss. geol. Landesanst. (n.s.), 17, 1895, 514 pp.; atlas, 38 pls.

Browne, M.—"Preliminary Notice of an Exposure of Rhaetic Beds, near East Leake, Nottinghamshire" (Fourth Contribution to Rhaetic Geology). Rep. Brit. Ass., 1895, pp. 688-90.

Cossmann.—[Rev. of Sacco's "Moll. terreni terziarii Piemonte" (Turin, 1894-5).] Feuille Natural., s. 3, xxvi., pp. 47-54, 1896.

Couturieaux, J.—"Sur un gîte fossilifère panisielien." Pr. Verb. Soc. mal. Belg., 1895, pp. cxliv.-vi.

List of fossils.

Cragin, F. W.—"A Study of the Belvidere Beds." Am. Geol., vol. xvi., pp. 357-85, 1895.

Delheid, E.—"Découverte d'ossements quaternaires a Saint-Gilles-Bruxelles." Pr. Verb. Soc. mal. Belg., 1895, pp. clv.-x.

List of accompanying fossil Mollusca.

Dollfus, G. F.—"Probable Extension of the Seas during Upper Tertiary Times in Western Europe." Rep. Brit. Ass., 1895, pp. 690-1.

Dollfus, G.—"Quelques mots sur le tertiaire supérieur de l'est de l'Angleterre." Pr. Verb. Soc. mal. Belg., 1895, pp. cxviii.-xxxvii.

Dollfus, G. F.—"On the true meaning of the term Bolderian." Geol. Mag. (n.s.), vol. iii., pp. 90-2.

Includes a list of the typical Molluscan remains found in the Bolderberg.

Douxami, H.—"Le Tertiaire des Environs de Sainte-Croix." Eclog. Geol. Helvet., iv., pp. 417-22, fig., 1896.

Foresti, L.—"Enumerazione dei Brachiopodi e dei Molluschi pliocenici dei dintorni di Bologna." Bull. Soc. malac. Ital., xix., 240-62, 1895.

This part deals exclusively with the Scaphopoda; no new species.

Fucini, A.—"Fauna dei calcari bianchi ceroidi con *Phylloceras cylindricum*, Sow. sp. del Monte Pisano." Atti. Soc. Toscana (Mem.), vol. xiv., pp. 125-351, pls. vi.-xiii., 1895.

(See I. B.)

Gregorio, A. de.—"Terza nota su talune Conchiglie Mediterranee viventi e fossili." Natural. Sicil., xiv., pp. 236-43, 1895.

Gregorio, A. de.—"Appunti su talune conchiglie estramarine di Sicilia viventi e fossili, con la spiegazione delle tavole dell' opera di Benoit." Natural. Sicil., xiv., 183-212, 1895.

Harmer, F. W.—"On the Derivative Shells of the Red Crag." Rep. Brit. Ass., 1895, pp. 676-7.

- Harmer, F. W.**—"The Southern Character of the Molluscan Fauna of the Coralline Crag Tested by an Analysis of its more Abundant and Characteristic Species." *Geol. Mag.*, no. 379, 1896, pp. 27-31 (read at B. A. Meeting; see abs. in Rep. Brit. Ass., 1895, pp. 675-6).
- Maas, G.**—"Die untere Kreide des subhercynen Quadersandstein-Gebirges." *Zeitschr. Deutsch. geol. Ges.*, xlvii., pp. 227-302, pls. v.-ix., 4 figs., 1895.
(See I. B.)
- Martin.**—"Over tertiaire fossielen van der Philippijnen." *Versl. Ak. Amsterdam*, 1895-6, pp. 130-2.
Includes list of tertiary Mollusca, now in the Leyden Mus., collected by Semper.
- *Matthew, G. F.**—"The Protolenus Fauna." *Tr. N. York Ac.*, xiv., pp. 101-53.
New genus, *Pelagiella*; 10 nn. spp.
- Mieg, M.**—"Excursions géologiques en Alsace." *Feuille Natural.*, s. 3, xxvi., pp. 23-5, 68-74, Map, Bibl., 1896.
- Miller, A. M.**—"The Association of the Gasteropod Genus *Cyclora* with Phosphate of Lime Deposits." *Amer. Geol.*, xvii., pp. 74-6, 1896.
- Newton, R. B.**—"On the Occurrence of *Alectryona unguata* in S.E. Africa; with a notice of previous researches on the Cretaceous Conchology of Southern Africa." *J. Conch.*, viii., pp. 136-51, 1896.
An important paper.
- *Oppenheim, P.**—"Beiträge zur Binnenfauna der provençalischen Kreide." *Palaeontogr.*, vol. 42, pp. 309-78.
Six nn. spp. Mollusca.
- Parona, C. F.**—"Nuove osservazioni sopra la fauna e l'età degli strati con *Posidonomya albina* nei sette comuni." *Palaeontogr. Ital.*, vol. i., pp. 1-42, pls. i.-ii., 1896.
(See I. B.)
- Regny, P. Vinassa de.**—"Synopsis dei Molluschi terziari delle Alpi venete." (Pt. I.: "Strati con *Velates schmiedeliana*.") *Palaeontogr. Ital.*, i., pp. 211-275, pls. xvi.-xviii., 1896.
(See I. B.)
- Regny, P. Vinassa de.**—"I Molluschi delle Glauconie bellunesi." *Atti. Soc. Toscana (Proc. Verb.)*, ix., pp. 261-2, 1896.
A preliminary list containing some new names.
- Tiessen, E.**—"Die subhercynen Tourtia und ihre Brachiopoden-und Mollusken-Fauna." *Zeitschr. Deutsch. geol. Ges.*, xlvii., pp. 423-533, pls. xvii.-viii., figs., Bibl., 1895.
(See I. B.)
- Tommasi, A.**—"La Fauna del Trias inferiore nel versante meridionale delle Alpi." *Palaeontogr. Ital.*, i., pp. 44-76, pls. iii.-iv., 1896.
(See I. B.)
- Weller, S.**—"A circum-insular Palaeozoic Fauna." *J. Geol.*, iii., pp. 903-17, 2 maps, table, 1895.
See also Abbott (VI.), Boettger (I. B.), Hedley (IV. A), and Vincent (I. B.).

V. COLLECTING AND METHODS OF RESEARCH.

- *Bavay.**—"Conservation et préparation des Mollusques." *Feuille Natural.* (3), xxvi., pp. 44-7, 1896.

- Borgert, A.**—"Ein einfaches Netz zum Fischen von Plankton bei schneller Fahrt." Zeitschr. Wiss. Mikr., xii., pp. 307-11, 2 figs., 1896.
- Plate, L. H.**—"Einige Winke zur Sammel und Conservierungstechnik für zoologische Forschungs reisende." Zoöl. Anz., xix., pp. 40-6, 1896.
- Sorby, H. C.**—(Mounting marine organisms as lantern slides.) J. R. Micr. Soc., 1896, pp. 136-40.

VI. ECONOMICS.

- Abbott, W. J. L.**—"An Ancient Kitchen Midden at Hastings, and a Barrow at the Wildernessee." (Rep. of Committee.) Rep. Brit. Ass., 1895, pp. 500-2.
- Boyce, Rupert W., and Herdman, W. A.**—"On Oysters and Typhoid." Rep. Brit. Assoc., 1895, pp. 723-6.
- This summary is too condensed to admit of further condensation here.
- Mason, O. T.**—"Shells as Implements." Science, n.s., vol. ii., p. 693.

VII. BIOGRAPHY.

- [Anon.]—"The late J. Bracebridge Wilson, M.A., F.L.S." Victorian Nat., vol. xii., p. 81.
- Ko[belt], Dr.**—"Hugh Cuming." Nach. Mal. Ges., 1895, pp. 187-191.
- Kuhn, Dr.**—"Un Naturaliste de la Seine Inferieure: Blainville." Bull. Soc. Sci. Nat. d' Elbeuf, Ann. 1894, pp. 36-8.
- Osborn, H. F.**—"Memorial Tribute to Professor Thomas H. Huxley." Science (n.s.), iii., pp. 147-54, 1896. (Read before the Biol. section of the N. York Acad.)

EDITOR'S NOTES.

Our readers will learn with regret that Mr. Walter E. Collinge, F.Z.S., who founded the "Journal of Malacology" in 1890, has been obliged to retire from the co-editorship, in consequence of pressure of work.

We regret to record the death of Mr. J. Bracebridge Wilson, an enthusiastic and most successful collector of forms of marine life, especially those of the Colony of Victoria. He passed away on Oct. 22nd, 1895, at the age of 67.

There is in our contemporary, the "Naturalist's Journal" for February, a record of a colony of *Helicella cantiana*, introduced from Hampshire to South Staffordshire eight years ago, and still surviving.

We are pleased to bring before our readers the analytical card catalogue of current zoological literature, a special edition of the "Bibliographica Zoologica," which in turn is a continuation of the "Zoologische Anzeiger." Professor Carus will continue to be editor-in-chief. The annual subscription to the Molluscan part is 12s., which should be sent to the Bibliographical Bureau, Zurich-Oberstrass (Switzerland).

In Volume IV., p. 8, attention might have been called to the anatomical work contained in Dr. Dall's paper, which is of some considerable importance.



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VOL. V.

ON SOME LAND SHELLS FROM NEW
GUINEA AND OTHER NEIGHBOURING
ISLANDS, WITH DESCRIPTIONS OF NEW
SPECIES.

By EDGAR A. SMITH, F.Z.S.

(*Assistant-Keeper of Zoology, British Museum*).

(PLATE II.)

The majority of the species referred to or described in this paper were collected in British New Guinea, in the region lying to the north of Orangerie Bay, by Mr. Anthony, Collector to the Hon. Walter Rothschild. The collection contained a large series of *Nanina humsteini*, *Chloritis* (*Sulcobasis*) *strophora*, *Leptopoma vitreum*, *Succinea strubelli*, and *Papuina bruneriensis*, in addition to the species hereafter mentioned. The new *Pupinella* from Djamna Island, and the *Helicina* from Neu Pommern (New Britain), have been placed in my hands for description by Herr Bruno Strubell, and the new *Charopa* from German New Guinea, and the two *Truncatellæ* from Samarai at the eastern extremity of the Island, were submitted to me by Mr. Hugh Fulton.

I take this opportunity of figuring four species described by me a few years ago, three of which have not as yet been illustrated. They are as follows:—1. *Nanina infelix** (Figs. 6, 7); 2. *Papuina aerope*† (Figs. 1, 2); 3. *P. hero*.† (Figs. 3, 4); 4. *P. janthe*† (Fig. 5). (Pilsbry, Man. Conch., series 2, vol. ix., pl. 46, figs. 17-19.)

* The Conchologist, vol. ii., p. 109.

† Ann. Mag. Nat. Hist., 1891, vol. vii., pp. 451-452.

1. *Microcystina sappho*, Brazier.

Helix (Thalassia) sappho, Brazier, Proc. Linn. Soc., N. S. Wales, 1876, vol. i., pp. 100 and 119; Canefri, Ann. Mus. Gen., vol. xix., p. 95 (*Thalassia*); Hedley, P. Linn. Soc., N. S. W., 1891, vol. vi., p. 75, pl. ix., f. 7.
 Hab.: Yule Island (Brazier); Maiva and Mission Hill (Hedley).

Var. *mailuensis*.

This form differs from the type in being more highly glossy, and in having the spire slightly more elevated.

An examination of a series of specimens of the typical form from Maiva, kindly sent to the Museum by Mr. C. Hedley, shows that the surface is microscopically striated, spirally, both above and beneath. In the shells from Mailu, however, this microscopic striation does not appear to be present, the surface in consequence being more polished.

A few examples of the normal form were also obtained at Mailu.

In the variety, the tongue-like reflexion of the columella is very strongly developed.

2. *Charopa nigrofusca*, n. sp. (Pl. II., Figs. 10-12).

Testa depressa, orbicularis, late et aperte umbilicata, saturate fusca, liris tenuissimis confertis flexuosis obliquis ornata; spira depressa, supra anfract. ultimum vix elata; anfractus $4\frac{1}{2}$ rotundati, regulariter accrescentes, sutura profunda sejuncti, primus laevis, caeteri costulati, ultimus ad peripheriam acute rotundatus, haud descendens; umbilicus latus, perspectivus, diam. totius $\frac{1}{3}$ adaequans; apertura latissime lunata, concolor; peristoma tenue, margine columellari haud reflexo.

Diam. maj. 6 millim., min. 5, alt. $2\frac{2}{3}$.

Hab.: German New Guinea.

3. *Macrochlamys papuana*, n. sp. (Pl. II., Figs. 8, 9).

Testa orbicularis, depressa, anguste perforata, rubello-cornea, nitida, striis incrementi tenuissimis sculpta; spira parum elata, ad apicem obtusa; anfractus $5\frac{1}{2}$ convexiusculi, lente accrescentes, infra suturam impresso-marginati, ultimus ad peripheriam obso-

lete vel obtusissime angulatus, prope aperturam vix descendens; apertura obliqua, lunata; peristoma tenue, supra umbilicum anguste expansum et concave reflexum.

Diam. maj. 16 millim., min. $13\frac{1}{2}$, alt. 8.

In addition to the fine lines of growth, indications of spiral striae are observable under a strong lens.

4. *Rhysota hercules*, Hedley.

Oxytes hercules, Hedley, Proc. Linn. Soc., New S. Wales, 1891, vol. vi., p. 70, pl. ix., figs. 1, 2: Smith, Conchologist, vol. ii., p. 108.

Var. = *O. flyensis*, Hedley, l.c. p. 71, pl. ix., figs. 3, 4; vol. ix., p. 390, pl. xxv., figs. 16 and 17 (jaw and radula).

Hab.: Fly River (Hedley).

I cannot agree with Mr. Hedley in separating the form *flyensis* as a distinct species. The slightly more elevated spire of the type does not prove a constant character, judging by the series of specimens I have examined. Both forms have a pink peristome, the sculpture is practically the same, and the periostracum is similar. The chief distinction consists in the difference of the ground colour. In *hercules* it is livid purple on the underside, generally darker towards the circumference than near the centre; whereas in *flyensis* it is white with a broad blackish marginal zone. The colour of the upper surface in *fresh* specimens (Mr. Hedley's were "dead shells") of *flyensis* is like that of *hercules*. Two specimens of the former in the Museum have the peristome of a very dark rich brown, becoming pinkish in the umbilical region.

5. *Omphalotropis papuensis*, n. sp. (Pl. II., Fig. 19).

Testa parva, anguste umbilicata, ovato-conica, pallide vel rufescente cornea, subnitens; spira conica, ad apicem subacuta; anfractus $5-5\frac{1}{2}$ convexi, regulariter accrescentes, sutura profunda sejuncti, lineis incrementi obliquis tenuissimis striati, ultimus ad peripheriam lira filiforme cinctus, infra convexus, circa umbilicum angustum rotundatus, haud angulatus; apertura rotundata, sed superne paulo acuminata; peristoma simplex, marginibus callo tenui junctis, columellari rufescente, leviter incrassato et reflexo.

Longit. 4 millim., diam. 3. Apertura 2 longa, $1\frac{1}{2}$ lata.

This species is allied to *O. brazieri* and *O. protracta* of Hedley. From the former it appears to differ in the more conical form of the spire, in the rounded base of the last volution, the absence of an angle around the umbilicus, and the simple peristome. It is apparently more narrowly perforate than *protracta*, has fewer whorls, although of larger dimensions, and the last has at the middle a distinct thread-like keel, which is continued a short distance up the spire just above the suture. It is not "angled at the margin" of the umbilicus.

6. **Cyclotus horridus**, Hedley (Pl. II., Figs. 16-18).

Cyclotus horridus, Hedley, Proc. Linn. Soc., N. S. Wales, 1891, vol. vi., p. 100, pl. xii bis, f. 40.

Hab.: Milne Bay, Mita and South Shore (Hedley).

Two specimens in the present collection, much larger than the types described by Mr. Hedley, may belong to this species. They are 16-17 millim. in their greatest diameter. The spiral striae and the bristly periostracum appear to be similar, excepting that here and there some of the former are a little coarser than the rest, one at the periphery forming a slight median carination.

7. **Truncatella quadrasi**, Möllendorff.

Truncatella quadrasi, Möllendorff, Bericht Senckenberg. nat. Gesell., 1893, p. 137, pl. v., f. 10-10 b.

Hab.: Leyte and Sibuyan, Philippine Islands (Möll.).

The specimens from Samarai, British New Guinea, agree exactly with the description and figure of this species, and as the distribution of the various forms belonging to the genus is known to be very wide in many instances, there is no reason why this well-marked form should not be found both at the Philippines and New Guinea.

8. **Truncatella valida**, Pfeiffer.*

A slender form (*T. teres*) of this widely-distributed species was also met with at Samarai, as well as a second variety in which the riblets are developed only just below the suture. This form was described by Pfeiffer under the name of *T. ceylanica*.†

* Conch.-Cab., ed. 2, p. 11, pl. ii., figs. 19-21.

† Mon. Auricul., p. 187.

The specimens vary in size, some being more slender than others, and intermediate degrees of costation are also occasionally met with. When the genus is re-monographed, it is probable that some older name will be discovered to replace that of *valida*.

9. ***Pupinella strubelli***, n. sp. (Pl. II., Fig. 13).

Testa imperforata, oblongo-ovata, superne acuminata, dilute fusco-cornea, haud nitida, lineis incrementi tenuibus obliquis striata; anfractus 6, superiores quinque convexi, ultimus minus convexus, obliquus, antice paulo descendens, supra aperturam leviter planatus, ad basin pone fissuram columellarem cristatus; apertura subcircularis, pallide flavescens vel sordide albida; peristoma expansum, reflexum, incrassatum, dilute flavescens; fissura columellaris parva, angusta; labrum ad insertionem leviter canaliculatum.

Longit. 11 millim., diam. 6; apertura intus 3.

Hab.: Djamna Island, Dutch New Guinea, off north coast.

A specimen of this species has been presented to the British Museum by Herr Bruno Strubell, after whom I have named it. *P. fultoni*, Smith, 1895 (= *P. luteola*, Brancsik*), is a closely-allied form, but a little larger, having a deeper columellar slit, but lacking the basal crest which occurs in the present species. *C. strubelli*, through the obliquity of the body-whorl, has a somewhat distorted look, like certain forms of *Streptaxis*. The columellar callus extends in a curve towards the termination of the outer lip, with which it forms a slight canaliculation. Herr Strubell informs me that Djamna or Djammina Island is situated off the north coast of the island.

10. ***Helicina pachystoma***, n. sp. (Pl. II., Fig. 14).

Testa turbinata, solida, flava; spira conica, ad apicem subacuta; anfractus 5 leviter convexiusculi, oblique tenuiter striatuli, ultimus postice rotunde subangulatus, antice infra angulum descendens; apertura intus flavescens; peristoma expansum, valde incrassatum, albo-pellucidum; callus basalisi mediocris, flavescens, circumscriptus.

Diam. maj. 8 millim., min. $6\frac{1}{2}$, alt. 7.

Hab.: Neu Pommern (= New Britain).

* Jahresheft naturwis. Vereines Trenesin Comitatus, 1894-5, xvii.-xviii. (1896), p. 225, pl. v., f. 7a, 7b.

This solid species is well characterised by the much-thickened and produced pellucid labrum. Two specimens have been presented to the British Museum by Herr Strubell.

11. *Helicina solitaria*, Smith (Pl. II., Fig. 15).

Helicina solitaria, Smith, Ann. Mag. Nat. Hist., 1887, vol. xix., p. 425, pl. xv., f. 10 (not good!).

Hab.: Eafa district, between Mounts Alexander and Bellamy, at an elevation of from 5,000 to 6,000 feet.

Several fresh specimens show that the colour is somewhat variable. The general ground-colour is opaque-white, sometimes varied with a spiral purple-red zone upon the middle of the upper surface of the whorls, or with some irregular spots or dots of the same colour. The apex is generally opaque pale yellow, and the two succeeding whorls are rich purplish red. A *faint* second zone is often traceable beneath the opaque white surface upon the base of the body-whorl. The labrum is bright yellow or orange, and the interior of the aperture is of a very dark purplish red tint. The umbilical callus is generally yellowish, but occasionally pale and glossy.

A single specimen is opaque white above, with scattered subhyaline wavy streaks and spots. The apex, however, is of the same opaque character, and conspicuous, as in the other specimens. *H. dentoni*, Pilsbry, appears to be the same as this species.

EXPLANATION OF PLATE II.

Figs. 1, 2.	<i>Papuina aerope</i> .
Figs. 3, 4.	<i>Papuina hero</i> .
Fig. 5.	<i>Papuina ianthe</i> .
Figs. 6, 7.	<i>Nanina infelix</i> .
Figs. 8, 9.	<i>Macrochlamys papuana</i> .
Figs. 10, 11, 12.	<i>Charopa nigrofusca</i> .
Fig. 13.	<i>Pupinella strubelli</i> .
Fig. 14.	<i>Helicina pachystoma</i> .
Fig. 15.	<i>Helicina solitaria</i> .
Figs. 16, 17, 18.	<i>Cyclotus horridus</i> .
Fig. 19.	<i>Omphalotropis papuensis</i> .

CURRENT LITERATURE.*

By E. R. SYKES, B.A., F.Z.S., and S. PACE, F.Z.S.

It is hoped that all Malacologists will aid in making this Bibliography as complete and useful as possible. Writers, both at home and abroad, are especially asked to send in copies of their respective papers for review.

I. CLASSIFICATION AND NEW FORMS.

A. RECENT FORMS.

Bavay, A.—"Coquilles nouvelles, provenant des récoltes de M. L. Levay, dans les rapides du Haut-Mékong, pendant la campagne du Massie, 1893-4-5." Journ. de Conch., vol. xliii., pp. 82-94, pl. v., *pars*, vi.

Brazier, J.—"New species of Cone from the Solomon Islands." Pro. Linn. Soc., N.S.W., vol. x, p. 471.

Dall, W. H.—"New species of *Ledu* from the Pacific Coast." Naut., vol. x., pp. 1-2.

Dall, W. H.—"Diagnoses of new Mollusks from the Survey of the Mexican Boundary." Proc. U. S. Nat. Mus., vol. xviii., pp. 1-6.

New Land and Freshwater Mollusks, with a scheme for breaking up the genus *Holospira*.

Dall, W. H.—"Diagnoses of new species of Mollusks from the West Coast of America." Proc. U. S. Nat. Mus., vol. xviii., pp. 7-20.

New species of Marine Univalves and Bivalves. Two interesting new genera are characterised: one, *Anaplocamus*, is "probably referable to the family Trichotropidae, as the peculiar production of the aperture, the thick, brown epidermis, and the curious operculum all have points in common with species of *Trichotropis*." The other, *Tractolira*, "appears to be a degenerate abyssal form of Volutidae."

Garstang, W.—"On *Doris maculata*, a new species of Nudibranchiate Mollusc found at Plymouth." Journ. Mar. Biol. Assn., n.s., vol. iv., pp. 167-8.

The species may be recognised by its orange colour and "the presence, on the back, of a number of conspicuously [purple] coloured tubercles, connected with one another by a network of low ridges."

Gude, G. K.—"Description of a new species of *Vitrina*, and new forms of Helicidae, with a list of the Helicoid shells hitherto found in the Canary Islands." Proc. Malac. Soc., vol. ii., pp. 15-22, figs.

Gude, G. K.—"Description of *Streptaxis paulus*, a new species." Proc. Malac. Soc., vol. ii., p. 23, fig.

Hedley, C.—"Notes on Mollusca from the Alpine Zone of Mount Kosciusko." Rec. Austral. Mus., vol. ii., pp. 101-5, pl. xxiii., *pars*.

A new *Endodonta* and a new *Flammulina*.

Hedley, C.—"Description of *Pagnus*, a new genus of Ringiculidae from Sydney Harbour." Rec. Austral. Mus., vol. ii., pp. 105-6, pl. xxiii., *pars*.

* An asterisk denotes that the work has not been seen. The bibliography is carried up to June 1st, 1896.

- Joubin, L.—"Note complémentaire sur un Céphalopode d'Amboine." Rev. Suisse Zool., iii., pp. 459-60, 1896 (1895).
M. Joubin places his *Loligo picteti* in the genus *Ideosepius*, Steenstr.
- Kobelt, Dr. W.—"Systematisches Conchylien Cabinet." Band. i., heft. cxxxi.-cxxxii. (contain Bullacea, pp. 1-72, pls. A, B, v.-xiv.)
- Kobelt, Dr. W., and Rolle, H.—"Diagnosen neuer Pomatien." Nach. Mal. Ges., 1896, pp. 34-7.
- Melville, J. C., and Ponsonby, J. H.—"Description of seven new species of Terrestrial and Fluvial Mollusca from the Hadramaut, S. Arabia." Proc. Malac. Soc., vol. ii., pp. 1-3, pl. i.
- Monterosato, Marquis, T. de.—"Note sur le Genre *Barlecia*, Clark." Journ. de Conch., vol. xliii., pp. 77-9.
- Pilsbry, H. A.—"Description of a new *Gastrodonta*." Naut., vol. ix., pp. 123-4.
- Pilsbry, H. A.—"New American Ancyliidae." Naut., vol. ix., pp. 137-9.
- P[ilsbry], H. A.—"Note on *Carychium exile* (C. B. Adams)." Naut., vol. x., p. 12.
- Pilsbry, H. A.—"New species of the Helicoid Genus *Polygyra*." Proc. Acad. Nat. Sci., Philad., 1896, pp. 15-20, pls. ii.-iii.
- Pilsbry, H. A.—"Descriptions of new species of Mollusks." Proc. Acad. Nat. Sci., Philad., 1896, pp. 21-4, figs.
Of the genera *Marginella*, *Ischnochiton*, and *Sagda* (?).
- Pilsbry, H. A.—"Manual of Conchology, ser. 1, part 63 (contains vol. xvi., pp. 113-160, pls. 32-43); ser. 2, p. 39 (contains pp. 97-144, pls. 26-40). Philadelphia, March, 1896.
- The *Aplysiidae* are continued in the Marine series. The new genus *Paraplysia* (type *Aplysia piperata*, Smith) is fully described. A new section of *Petalifera*, Gray, is proposed under the name of *Pseudaplysia*, type *Phyllaplysia punctulata*, Tap.-Can. The following are new species:—*Dolabrifera jacksoniensis* (N. S. Wales), *D. nicaraguana* (Nicaragua), and *D. swiftii* (W. Indies). Several useful synopses of species are given under their respective genera.
- In the second series, the part opens with a key to the sub-genera of *Auris*, of which *Eudolichotis* is now proposed for *A. distorta*, Brug., and allies. After an enumeration of the species of *Auris*, we pass to *Bulimulus*, Leach: this is divided into three groups—(a) apical whorls smooth; (b) apical whorls irregularly wrinkled subvertically, or with the wrinkles wavy, dislocated or variously broken into granules; (c) apical whorls with regular, straight vertical riblets. Such a division is also in agreement with the geographical distribution. The first of these divisions, containing the single sub-genus *Bostryx*, occupies the remainder of the part: several divisions of the sub-genus are used, of which *Geoceras* (type *B. columellaris*, Reeve) is new.
- Simroth, Dr. H.—"On *Neohyalimax brasiliensis*, n. gen., n. sp. (allied to *Hyalimax*), from Brazil." Proc. Malac. Soc., vol. ii., pp. 39-45, pl. v.
- Simroth, Dr. H.—"Über bekannte und neue Urocycliden." Abh. Senck. Ges., Frankft., vol. xix., pp. 281-312, 2 pls.
- Sowerby, G. B.—"Description of *Cassia adcocki*, a new species [from South Australia]." Proc. Malac. Soc., vol. ii., p. 14, fig.
- Sterki, Dr. V.—"New North American *Pisidia*." Naut., vol. ix., pp. 124-5.
- Suter, H.—"Descriptions of some new land Mollusca from New Zealand and Macquarie Island." Proc. Malac. Soc., vol. ii., pp. 23-8, pl. iv.
New species of *Lagochilus* (2), *Athoracophorus* (1), *Endodonta* (2), and *Laoma* (6).

- Woodward, B. B.—"On a proposed classification of the *Pelecypoda*." Nat. Sci., vol. viii., pp. 239-244.
- Wright, Berlin H.—"New Florida Unios." Naut., vol. ix., pp. 121-2, pl. ii.
- Wright, Berlin H.—"New American *Unionidae*." Naut., vol. ix., pp. 133-5, pl. iii.
- See also Brancsik (IV. A), Collinge (IV. A), Ijima and Ikeda (II.), and Sowerby (IV. A).

B. FOSSIL FORMS.

- Ami, H. M.—"Note on *Cardinia subangulata*, Dawson, and *Arca punctifer*, Dawson." Ottawa Natural., x., p. 44, 1896.

The above specific names being pre-occupied, the following are proposed:—*C. angulifera* and *A. puncticostata*.

- Dautzenberg, Ph., and Dollfus, G.—"Du nom spécifique qu'il convient d'attribuer au *Corbula* qui caractérise les sables de merxem." Proc.-Verb. Soc. Mal., Belg., 1896, pp. xviii.-xxi.

- Di-Stefani, G.—[See IV. B: "Lo scisto marnosa . . . "].

The following new species:—*Trochus integrostriatus*, *Protonerita? garganica*, *Promathidia pellatii*, *P. kittli*, *Natica squinaboli*, *Pseudomelania adriatica*, and *Actaeonina (Cylindrobullina) lesinensis*.

- Hicks, H.—[See IV. B: "Morte Slates."]

The following new Molluscs:—*Modiolopsis barricanensis* and *Pterinaca mortensis*.

- Jukes-Browne, A. J., and Hill, W.—[See IV. B: "Delimit. Cenom "]

Contains critical remarks on many forms, and description of *Ammonites (Acanthoceras) pentagonus*, n. sp. and n. var., *compressus* of *A. (Ac.) hippocastanum*, Sharpe.

- Pilsbry, H. A.—"*Pleurotomaria crotaloides*, Morton, in the New Jersey Cretaceous." P. Ac., Philad., 1896, pp. 10-1.

- *Stremououchow, M. D.—"Note sur la *Posidonomya buchi*, Roemer des schistes de Balaclava en Crimée." Bull. Soc. Moscow, 1895, pp. 391-5, pl., 1896.

- Woodward, H.—"On a Fossil Octopus, *Calais newboldi* (J. de C. Sby., MS.), from the Cretaceous of the Lebanon." Quart. J. Geol. Soc., vol. lii., pp. 229-34, pl. vi. and fig., Abs. in Ann. Nat. Hist. (s. 6), vol. 17, p. 258. Also contains figure and description of *Plesioteuthis fraasi*, n. sp.

See also Degrange-Touzin (IV. B) and Gorjanovic-Kramberger (IV. B).

II. ANATOMY, HISTOLOGY, DEVELOPMENT AND PHYSIOLOGY.

- Amandrut, Alexandre.—"Sur les poches buccales et les poches oesophagiennes des Mollusques." C. R. Ac. Sci., vol. cxxii., pp. 1218-1221.

- André, E.—"Le pigment mélanique des Limnées." Rev. Suisse Zool., iii., pp. 429-31, 1896 (1895).

- Appellöf, A.—[Rev. of *Mitsukuri, K., and Ikeda, S.: "Notes on a gigantic Cephalopod." Zool. Mag., vii., pp. 39-50.] Zool. Centralbl., iii., p. 220, 1896.

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Fischer, H.—[Rev. of several papers by **Bouvier** bearing on the question of the inter-relationships of the *Prosobranchiata*, *Opisthobranchiata*, and *Pulmonifera*.] *J. Conchyl.*, xliii., pp. 103-6, fig., 1896.

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The octopod herein described is a most remarkable one, on account of its enormous antero-posterior compression; its shape is that of a plano-convex disc (with only the tips of the arms projecting), 55 mm. in diameter, and having a maximum thickness of only about 8 mm., in the single immature specimen obtained. No trace of a radula was discovered, though its absence was not definitely proved. Is it possible that we may be here dealing with a parasitic form? There is something about the general sucker-like shape and the reduction or absence of the radula suggestive of this hypothesis.

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Korschelt, E.—[Rev. of ***Fujita, T.**: "Preliminary note on the Mesoderm Formation of Pulmonata." *Zoöl. Mag.* (Tokyo), vii., pp. 1-5.] *Zoöl. Centralbl.*, iii., 218-220.

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This volume, which deals with the Mollusca, Echinodermata and Entero-pneusta, though in the main a translation of the third and fourth parts of Dr. Lang's well-known and most excellent "Lehrbuch," is, however, an improvement on the German work, as the Molluscan portion has been revised by Mr. B. B. Woodward, and an index has been added. The book, as it stands, is undoubtedly the most reliable and most up-to-date text-book of Molluscan Morphology.

***Lee, A. Bolles.**—"Sur le Nebenkern et sur la Formation du Fuseau dans les Spermatocysts des *Helix*." Cellule, xi., pp. 223-6, 257-60, 1896.

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Pilsbry, H. A.—[Parts 39 and 63 of Tryon's "Manual of Conchology." See I. A.]

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Simroth, H.—[Rev. of Pelseneer's "Prosobranches aériens et pulmonés branchifères."] Zoöl. Centralbl., iii., 214-7, 1896.

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- Kennard, A. S.—"Introduction of Mollusca into Britain." *Sci. Goss.*, n.s., vol. iii., pp. 12-13.
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- Walker, Bryant.—"On certain abnormal *Sphaeria*." *Naut.*, vol. ix., pp. 135-7.
- See also Linden (II.).

IV. DISTRIBUTION AND FAUNA.

A. RECENT FORMS.

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- Allen, E. J.—"Notes on Dredging and Trawling work [at Plymouth] during the latter half of 1895." *Journ. Mar. Biol. Assn.*, n.s., vol. iv., pp. 164-6.
Records, *inter alia*, the first discovery of a Neomenian (*Dondersia banyulensis*, Pruvot) in the South of England.
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- Brancsik, Dr. C.—"Nachtrag zur Molluscen-Fauna d. Trenesiner Comitates." *Jahr. Nat. Ver. Trencsiner Comitates*, Jahrg. xvii.-xviii., pp. 111-4.
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An interesting contribution to the New Guinea fauna, with one new species.
- Bucquoy, E., Dautzenberg, Ph., and Dollfus, G.—"Les Mollusques Marins du Roussillon, vol. ii., pp. 541-620, pls. lxxix.-lxxxviii., May, 1896.

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- Coates, H.—"Natural History of the banks of the Tay: the Mollusca." *Trans. Perthshire Soc. Nat. Sci.*, vol. ii., pp. 60-2.
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Five species, of the known seven, are recorded, of which two *Agriolimax* are new.
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- Crosse, H.—"Additions a la Faune Malacologique terrestre et fluviatile de la Nouvelle-Calédonie et de ses dépendances." *Journ. de Conch.*, vol. xliii., pp. 79-82, pl. v. *pars*.
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- Dautzenberg, Ph.—"Mollusques testacées recueillis dans les serres du Museum." *Bull. Mus. Hist. Nat.*, 1896, pp. 28-9.
- Ford, John.—"Some references to the Genus *Oliva*." *Naut.*, vol. x., pp. 3-5.
- Ihering, Dr. H. von.—"Os Unionidos da Florida." *Rev. do Mus. Paulista*, vol. i., pp. 207-222.
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- Lemon, J. H.—"Notes on some Ontario Shells." *Naut.*, vol. x., pp. 10-11.
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- Newcombe, C. F.—"Report on the Marine Shells of British Columbia." *Bull. N. H. Soc. Brit. Columbia*, 1893, pp. 31-72, Bibl.
- Nobre, Augusto.—"Mollusques et Brachiopodes du Portugal." *Ann. Sci. Nat.*, Porto, an. iii., pp. 97-108.
Continuation of paper noted *ante* p. 13.
- Oldham, C.—"The Land and Freshwater Mollusca of Cheshire." *The Naturalist*, no. 249, pp. 109-128.
Records 102 out of the 131 admitted by him as British.
- Sargent, H. E.—"Annotated list of the Mollusca found in the vicinity of Clearwater, Wright Co., Minnesota (part second)." *Naut.*, vol. ix., pp. 125-8.

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- Simpson, James.**—"Supplement to Dawson's 'Mollusca of Aberdeen and the neighbouring sea.'" *Ann. Scott. Nat. Hist.*, no. 18, April, 1896, pp. 100-4.
- Sowerby, G. B.**—"List of the Pleurotomidae of South Australia, with descriptions of some new species." *Proc. Malac. Soc.*, vol. ii., pp. 24-32, pl. iii.
- Sterki, Dr. V.**—"A few notes on *Pisidia*." *Naut.*, vol. x., pp. 8-9.
- Streng, L. H.**—"A new variety of *Limnaea*." *Naut.*, vol. ix., p. 123, fig.
- Sturany, Dr. Rudolf.**—"Mollusken welche anlässlich der österreichischen Tiefsee-Expeditionen S. M. Schiffe 'Pola,' 1890-4, gedredschit wurden." *Kais. Ak. Wiss. Wien.*, 1896, pp. 56-9.
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- Tregelles, G. F.**—"The Marine Mollusca of Cornwall." *Journ. of Conch.*, vol. viii., pp. 190-200.
The first instalment of a very complete faunal list, with the nomenclature much more accurate than is usually found in British lists.
- Wright, Berlin H.**—"Descent and Distribution of Unionidae." *Naut.*, vol. x., pp. 5-8.
- See also **Bavay (I. A)**, **Dall (I. A)**, **Gude (I. A)**, **Melvill (I. A)**, and **Suter (I. A)**.

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- *Cooke, J. H.**—"Notes on the 'Pleistocene Beds' of the Maltese Islands." *Geol. Mag. (n.s., Dec., iv.)*, pp. 201-10, 1896.
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List of fossils.
- Gorjanovic-Kramberger.**—"Ueber das Vorkommen der, *Pereiraia gervaisii*, Vez. sp., in Croation." *Verh. geol. Reichsanst.*, 1896, pp. 142-3.
Also contains list of associated Molluscs.
- Hicks, H.**—"On the Morte Slates and Associated Beds in North Devon and West Somerset." *Quart. J. Geol. Soc.*, vol. lii., pp. 254-72, pls. x-xi.
See I. B.

Holroyd, W. F., and Barnes, J.—"On the Rocks and Fossils of the Yoredale Series of the Marsden and Saddleworth Valleys." *Tr. Manchester Geol. Soc.*, vol. xxiv., pp. 70-91 (Discussion pp. 72-9), 13 figs., 1896.

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Lamplugh, G. W.—"On the Speeton Series in Yorkshire and Lincolnshire." *Geol. Mag.*, vol. lii., pp. 179-228, 1896.

Laville, A.—"Le gisement pléistocène a *Corbicules* de Cergy." *Bull. Soc. geol., France* (s. 3), xxiii., pp. 504-7.

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Newton, R. B.—"Corrigendum (to paper noted *ante*, p. 15). *Journ. of Conch.*, vol. viii., p. 208.

Newton, R. B.—"On the Identification of the *Acanthoceras mammillatum* and *Hoplites interruptus* Zones at Okeford Fitzpaine, Dorsetshire." *Geol. Mag.* (n.s., Dec., iv.), iii., pp. 198-201.

Contains list of fossils collected by Miss Forbes and Miss Lowndes.

Redlich, K. A.—"Geologische Studien in Rumänien." *Verh. geol. Reichsanst.*, 1896, pp. 77-83.

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Sykes, E. R.—"List of a small Collection of Mollusca from a Raised Beach on Portland." *P. Dorset Club*, vol. xvi., pp. 171-4.

Teisseyre, L.—"Geologische Reiseberichte aus den Karpathen Rumäniens (District Bacau)." *Verh. geol. Reichsanst.*, 1896, pp. 132-42.

Toula, F.—"Ueber die Auffindung einer Muschelkalkfauna am Golfe von Ismid." *N. Jahrb. Min.*, 1896, pp. 149-51.

Some new names without diagnoses.

Toula, F.—[Rep. of voyage to the Bosphorus and S. Coast of the Marmora Sea.] *S. B. Ak. Wien.*, 1896, pp. 3-7.

List of fossils, containing several new names without descriptions.

Williams, H. S.—"On the origin of the Chouteau Fauna." *J. Geol.* iv., pp. 283-90, 1896.

V. COLLECTING AND METHODS OF RESEARCH.

Elum, F.—"Ueber Wesen und Wert der Formelhärtung." *Anat. Anz.*, xi., pp. 718-27, *Bibl.*, 1896.

Browne, M.—"Artistic and Scientific Taxidermy and Modelling. A Manual of Instruction in the Methods of Preserving and Reproducing the Correct Form of all Natural Objects. Including a Chapter on the Modelling of Foliage." London (A. & C. Black, £1 1s. od.), 1896, 463 pp., 22 pls., 11 figs., *Bibl.*

This important work, though in the main dealing with Vertebrates, contains a mass of information on the methods of preserving Molluscs, and particularly full accounts of the methods of preparing glue and other casts.

Gerota, D.—"Contribution à l'étude du formol dans la technique anatomique." *Int. J. Anat. Physiol.*, xiii., pp. 108-39, 1896.

Although written from the point of view of the human anatomist, this paper should be read by all those interested in the preservation and fixation of zoölogical material for the museum or laboratory. The time will probably arrive when alcohol will be used as a preserving agent, especially by the zoölogist in the field, only in exceptional cases; as for most purposes Formalin is in every way superior.

Nusbaum, J.—"Einige Bemerkungen über das Aufleben der Paraffinschnitte mit Wasser." *Anat. Anz.*, xii., pp. 52-4, 1896.

A very good description of this, the simplest and best method of fixing sections; it deserves to be better known.

VI. ECONOMICS.

Roché, G.—"Recherches statistiques sur l'Huître cultivée des côtes de France." *C. R. Ac. Sci.*, cxvii., pp. 955-7, 1896.

VII. BIOGRAPHY.

Gill, T.—"Huxley and his Work." *Science*, n.s., iii., pp. 253-63.

A memorial address given before the Scientific Societies of Washington.

NOTE.

On *Pterosoma plana*, Lesson.—At the June meeting last year of the Malacological Society of London, a paper by Mr. C. Hedley, F.L.S.,* was read claiming *Pterosoma plana*, Lesson, as a Heteropod. This conclusion was arrived at after a careful examination of several examples which had been "cast ashore by an easterly gale at Mavoubra Bay, near Sydney." In this paper it is stated that "seventy years ago the French scientific expedition fished up this species between the Moluccas and New Guinea, but never again till now has it been encountered by a naturalist." I would, however, point out that the true position of this mollusc was first shewn by Mr. C. Collingwood, F.L.S.,† in 1868, from a specimen dredged by himself in the Formosa Channel while naturalist on H.M.S. "Serpent" in 1866. As Mr. Hedley has overlooked this, I will give the full quotation:—"And here I may refer to several singular marine animals discovered by the towing-net in the Formosa Channel, which proved a rich locality for strange and rare forms. Among them was *Pterosoma* (*Pt. plana*), a transparent, delicately-tinted, winged animal, thick and gelatinous and almost invisible in the water. It belongs to a class of Mollusks known to naturalists as Heteropods, oceanic animals of anomalous forms with the foot variously modified for swimming. The *Pterosoma* was established as a genus by Lesson from a species he found swimming in the vicinity of New Guinea, but either the drawings of the animal are very badly executed in all the books, or the one found in my net must be a second species, for there is but little resemblance between them." This last statement is now confirmed by Mr. Hedley, as he has shewn that Lesson's drawing was made from a damaged specimen.

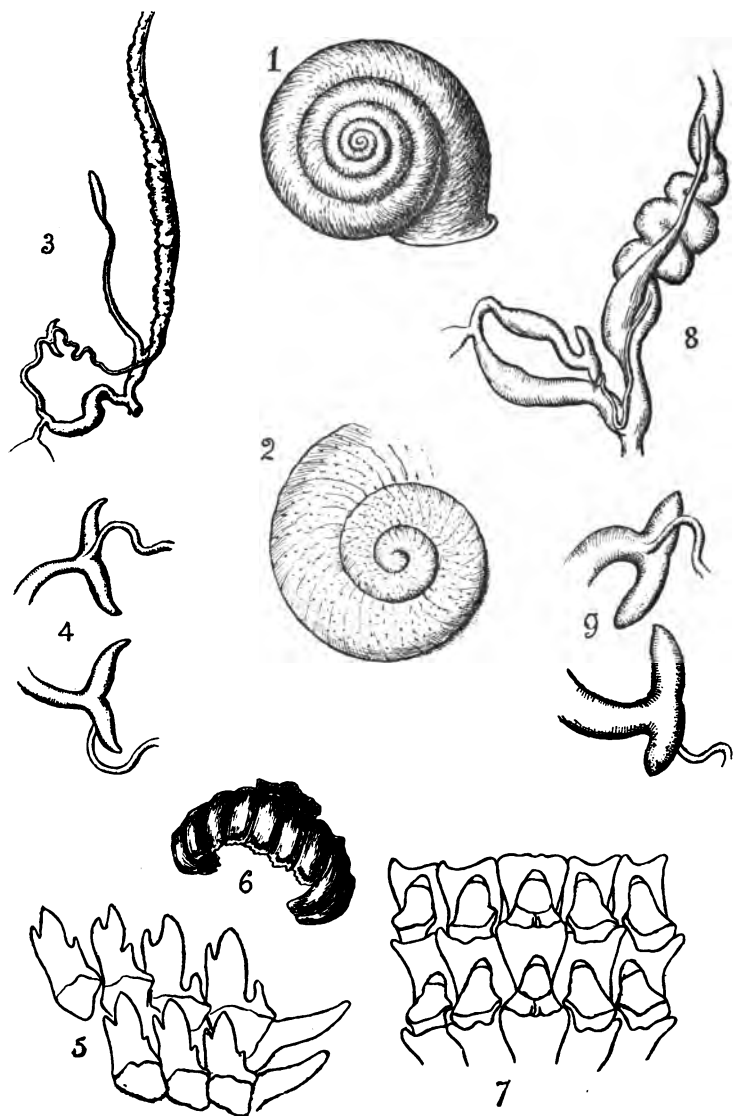
EDITOR'S NOTES.

Malacologists will be glad to hear that Mr. Charles Hedley has been attached as Zoölogist to the Expedition which is to make a boring in the coral atoll of Tunafuti, one of the Ellice Islands. We wish him all good fortune.

Our contemporary, *Deronia*, has now blossomed into print, and its readers will welcome the change.

*Proceedings of the Malacological Society of London, vol. 1, page 333.

†Rambles of a Naturalist. Outhbert Collingwood, M.A., F.L.S., &c., 1868, page 54.



W. J. Webb del Figs. 1, 2, 3, 4, 8, 9
Ethel Webb del Figs. 5, 6, 7

Garratt & Walsh, sculpt.

Chloritis (Sulcobasis) strophora and *C. rehsei*.

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VOL. V.

ON THE ANATOMY OF CHLORITIS (SULCOBASIS) STIROPHORA, E. A. SMITH,
& OF C. REHSEI, VON MARTENS.

By WILLIAM MOSS & WILFRED MARK WEBB, F.L.S.,

(PLATE III.)

In the "Guide to the Study of the Helices"* by Mr. Pilsbry the latter says that the anatomy of the snails placed in the section *Sulcobasis* of the genus *Chloritis* is unknown: since the making of this statement, the only contribution to the subject that we are aware of, is contained in a paper by Mr. Hedley† and deals with the internal structure of *Chloritis* (*Sulcobasis*) *rehsei* v. Martens.

Some time ago one of us received from Mr. Da Costa, three spirit specimens of *Chloritis* (*Sulcobasis*) *stirophora*, E. A. Smith together with a single example of *C. rehsei*. The former species was originally described as *Helix* (*Hadra*) *stirophora* by Mr. Edgar Smith who subsequently transferred it to the position which it now occupies because, he informs us "on the examination of a number of other and fresher specimens", he "noticed that the surface was minutely pitted in some places and evidently at one time was pilose."

The references are as follows:—

Helix (*Hadra*) *stirophora*. E. A. Smith, Ann. Mag. Nat. Hist., ser. 6, Vol. V. (March, 1895) pp. 231-2. Figured (Nov. 1895) pl. xx., fig. 9.

Chloritis (*Sulcobasis*) *stirophora*. E. A. Smith, Journ. of Malac., Vol. V., No. 2 (June, 1896), p. 17. No remarks.

* Manual of Conchology, ser. 2. Pulmonata, vol. ix., pt. 35 (August, 1894) p. 120.

† The Land Molluscan Fauna of British New Guinea, and supplement, Proc. Linn. Soc., N.S.W. Vol. ix., ser. 2 (June 27th, 1894), p. 384.

An examination of the soft parts has been made by the writers and the following notes will serve in the first place as a corroboration of Mr. Smith's opinion and, in the second, together with those on the other species (*C. rehsei*) as a contribution to our knowledge of the section *Sulcobasis*.

In the two columns below some of the characters of the genera *Chloritis* and *Thersites* (= *Hadra*) are contrasted, those points which have been made out in *Chloritis stirophora* are italicized while the references in brackets are to pages in the "Guide to the Study of the Helices."

CHLORITIS.

SHELL—"Apical whorls and usually the whole shell sculptured with hair-points arranged in quincunx," thus—** (p. 118.)

ANIMAL—"Tail rounded, above with an impressed longitudinal median line—see below—*Mantle edge bearing a small right body lappet.* * (p. 117 *C. porteri*). *Spermatheca duct, rather long and closely bound to the uterus*—Plate III., figures 3 & 8. In Fig. 3 the spermatheca has been freed—penis cavity containing at the apex an imperforate fleshy papilla." (p. 117).

"A peculiar feature is that the *epiphallus bears not only a short flagellum at its apex, but a curved 'talon.'*" — Letter from Mr. Pilsbry,* August 19th, 1896. (See also figure of *C. argillacea*, Plate xxvii., figs. 8 & 9).

THERSITES.

SHELL—"Apex smooth, never granulated or punctate in regular quincunx" (p. 125).

ANIMAL—"Tail with a slight median longitudinal groove" (p. 126).

"The duct of the spermatheca generally long and swollen below" (p. 126).

"Penis enlarged distally where its cavity contains a solid papilla" (p. 126).

"The flagellum is shorter or obsolete (p. 126)."

"Nothing of the sort (*i.e.* 'talon' has been found in *Thersites*."—Letter from Mr. Pilsbry, August 19th, 1896.

In addition, it may be pointed out that the jaw of *C. stirophora*—Plate III, figure 6—seems most nearly to resemble that of *Chlorites*, while the radula, though of the general type common to this and allied genera, very closely resembles that of *C. rehsei*,

* A dissection was sent to Mr. Pilsbry (together with a jaw, a photograph of the radula and some notes), who agrees that the anatomy is decidedly that of *Chloritis*.

figured by Mr. Hedley.* The genital organs of the last mentioned species—Plate VI., figures 8 & 9—agree with those of *C. stirophora* in all the particulars italicized above; it should be noted, however, that the duct of the spermatheca is “swollen below” as recorded for the genus *Thersites*. The “talon” is well shown and as Mr. Hedley’s drawing does not bring out this particular point and the spermatheca was broken off in his specimen, new figures have been given (Plate III, figures 8 & 9).

There are some features in which the two species under consideration differ, not only from the description given by Mr. Pilsbry for *Thersites*, but for the genus *Chloritis* as a whole, and which, perhaps, should be taken as being peculiar to the section *Sulcobasis*.

SULCOBASIS.

Tail above with a median row of large tubercles (in *C. stirophora*. The foot was cut away in the other species), *some of which are cleft to form a double row, while others present a trilobed appearance. No sign of a papilla in the penis cavity* which was found in both species to have the *interior walls wrinkled* as figured and described by Mr. Hedley* in *C. rehsei*.

CHLORITIS.

“Tail above, with an impressed longitudinal median line” (p. 117, this is italicized by Mr. Pilsbry).

“Penis cavity containing at the apex a fleshy papilla” (p. 117).

On the other hand the spiral sulcations upon which the name *Sulcobasis* was founded are not to be seen on the undersides of the specimens of *C. stirophora* that were examined.

It may be taken as proved that the species *stirophora* is a true *Chloritis* and that *Sulcobasis* has more title to be retained as a separate section.

* The Land Molluscan Fauna of British New Guinea, 2nd supplement. Proc. Linn. Soc., N.S.W., Vol. IX., ser. 2 (June 27th, 1894), p. 384 Plate XXVI., fig. 25.

EXPLANATION OF PLATE III.

- | | | |
|-----------------------|---------|--|
| | Fig. 1. | The shell, natural size. |
| | Fig. 2. | Apical whorls of the shell, enlarged to show hair-points. |
| <i>Chloritis</i> | Fig. 3. | Genitalia (unravelled, the spermathectic duct was bound to the uterus as shown in figure 8.) |
| (<i>Sulcobasis</i>) | Fig. 4. | The flagellum, "talon" and origin of the vas deferens, enlarged and seen from above and below. |
| <i>strophora</i> | Fig. 5. | Outer lateral "teeth" from the radula. |
| E. A. Smith. | Fig. 6. | The "jaw." |
| | Fig. 7. | Median and inner lateral "teeth" from the radula. |
|
<i>Chloritis</i> | Fig. 8. | Genitalia (not unravelled). |
| (<i>Sulcobasis</i>) | Fig. 9. | The flagellum, "talon," and origin of the vas deferens, enlarged as seen from above and below. |
| <i>rehsei</i> | | |
| von Martens. | | |

NOTICE.

The Committee of the British Association or Zoölogical Bibliography and Publication have made the following statement :—

It is the general opinion of scientific workers, with which the Committee cordially agrees :—

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The Committee further begs to ask for your co-operation in the following matter. There are certain rules of conduct upon which the best workers are agreed, but which it is impossible to enforce, and to which it is difficult to convert the mass of writers. These are :—

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(5) That new species should be properly diagnosed and figured when possible.

(6) That new names should not be proposed in irrelevant footnotes, or anonymous paragraphs.

(7) That references to previous publications should be made fully and correctly, if possible in accordance with one of the recognized sets of rules for quotation, such as that recently adopted by the French Zoölogical Society.

CURRENT LITERATURE.*

By E. R. SYKES, B.A., F.Z.S., and S. PACE, F.Z.S.

It is hoped that all Malacologists will aid in making this Bibliography as complete and useful as possible. Writers, both at home and abroad, are especially asked to send in copies of their respective papers for review.

I. CLASSIFICATION AND NEW FORMS.

A. RECENT FORMS.

See also: Bergh (II.), Schepman (IV. A), Simroth (IV. A), Willey (II).

Adams, L. E.—"*Limax maximus* L. var. *alba* nov. in Northamptonshire." J. Conch., viii., 228, 1896.

Baldwin, D. D.—"Description of Two New Species of Achatinellidae from the Hawaiian Islands." Nautilus x., 31-2, 1896.

Partulina hayseldeni and *Amastra aurostoma*; both from LANA.

Bernard, F.—"Diagnoses de Coquilles nouvelles de Lamellibranches (genres *Hochstetteria* et *Condylocardia*)." Bull. Mus. Paris, 1895, pp. 193-7.

The following are described without figures:—*H. costata*; *H. melagrina*; *H. muniera*; *C. sancti-pauli* (Munier-Chalm., M.S.); *C. crassicosta*; *C. concentrica*; *C. australis* (M. Ch., M.S.)

Bernard, Felix.—*Sciobretia australis*, type nouveau de Lamellibranche. Bull. Soc. Ouest France, vol. vi., pp. 364-395, pl. xii-xv.

Boettger, O.—[See IV. A: "Mollusken d. Philippinen."]

The following new species:—*Syrnola heptagvra*, *S. manilensis*, *S. quadrasi*, *S. incerta*, *S. subcristata*, *Turbonilla quadrasi*, *T. ductylus*, *T. truncatula*, *Eulimella quadrasi*.

Dall, W. H.—"Note on *Neritina showalteri*, Lea." Nautilus x., 13-5, 1896.

New genus *Lepyrium* for this species, which has been re-discovered in Alabama. The operculum is destitute of calcareous layer and articular processes, and the radula differs from that of *Neritina*.

Dall, W. H.—"On the American Species of *Ervilia*." Nautilus x., 25-7, 1896.

E. maculosa, n. sp.

Drouet, H.—"Unionidae nouveaux ou peu connus (10^e article)." J. Conchyl., xliii., pp. 220-34 (1895), 1895.

The following so-called new species:—*A. frigida*, *A. orbicularis*, *A. fennica*, *U. sardianus*, *U. polychestus*, *U. hermicus*, *U. ephesinus*, *U. lydicus*, *U. aequilibratus*.

Fischer, H.—"Note préliminaire sur le *Pterygiotuthis giardi*, Cephalopode nouveau recueilli dans le cours de l'Expedition scientifique du *Talisman* (1883)." J. Conchyl. xliii. pp. 205-11., pl. ix. (1895), 1896.

P. giardi n. gen. et sp. The genus presents affinities with both the Onychoteuthidae and the Ommatostrephidae; the author places it in the former group.

* An asterisk signifies that the work has not been seen by the recorders. The bibliography is carried up to September 1st, 1896.

Fulton, H.—"Descriptions of new Species of *Nanina*, *Helix*, *Amphidromus* and *Porphyrobaphe*." Ann. Nat. Hist. (s. 6), vol. 18, pp. 100-4.

Includes a new section (*Xenothauma*) for a very interesting new species from Peru. The following are new species:—*N. (Oxytes) fidelis*; *H. (Xenothauma) baroni*; *A. sumbaensis*; *A. kalaoensis*; *P. approximata*; *P. vicaria*. We would point out that the first use of *Nanina* was by Risso (1826) for a marine shell; it therefore cannot be used for land molluscs.

Gude, G. K.—[See II., "Armature of Helicoid Land Shells."] *N. sp. Corilla fryae*.

Gude, G. K.—"A New Shell and Illustrations of some hitherto unfigured Helicidae." Sci. Gossip (N.S.) iii., 57-60, 8 figs.

Corasia lauræ, n. sp., see p. 5; and *Ganesella catocyra*, *G. apex*, *Endodonta quadrasi*, *E. fusca*, *Trochomorpha boettgeri*, *Pyramidula omalisma* are figured.

H. W. E.—"Cephalopods of the North Atlantic" (Rev. of Joubin's Report on the P. of Monacos Collections). Nat. Sci. ix., 124-5.

Hedley, C. and Willey, A.—"Description of a New Species of *Astraliium* from New Britain." P. Linn. Soc., N.S. Wales, xxi., 107-9, pl. 12, 1896.

A. (Guildfordia) n. sp. moniliferum near *A. triumphans*.

Hervier, J.—"Descriptions d'espèces nouvelles de l'Archipel Néo-Calédonien." J. Conchyl., xliii., pp. 141-52, 236-40 (1895), 1896.

The following new species:—*Drillia carnicolor*, *D. suavis*, *Clavus rugizonatus*, *C. protentus*, *C. gibberulus*, *C. leforestieri*, *Surcula gatchensis*, *Glyphostoma lamproideum*, *G. jousseaumei*, *G. leucostigmatum*, *G. aubryanum*, *G. globulosus*, *G. disconicum*, *G. subspurcum*, *G. goubini*, *G. crosseanum*, *G. melanoxytum*, *G. tigroidellum*, *G. fastigiatum*, *G. strombillum*, *G. alphonsianum*, *G. callistum*, *G. parthenicum*, *G. gaideti*, *G. trigonostomum*.

Ihering, H. von.—"Sur les *Arca* des côtes du Brésil et sur la classification du genre *Arca*." J. Conchyl., xliii., pp. 211-9 (1895), 1896.

*Joubin, L.—"Notes sur divers Céphalopodes trouvés dans l'estomac d'un Cachalot." Bull. Soc. Ouest France, v., pp. 13-18, 1896.

Joubin, L.—[See II., "Obs. divers céphalop."] *Abrialiopsis pfefferi*, n. g. et sp.

Abrialiopsis pfefferi, n. g. et sp.

Kobelt, W.—"Bullacea" in "Systematischer Conchylien-Cabinet von Martini und Chemnitz." Nuremberg, 1896 (pp. 73-144, pls. 15-9).

This part completes the Bullidae, Akeridae and Hydatinidae and begins the Philinidae. No new species are described.

Locard, A.—A propos de l'*Helix tenveri* de G. Michaud. Echange, pp. 17-18, 25-7.

Locard, A.—A propos de l'*Helix glabella* de Draparnaud. Echange, pp. 33-6.

Mabille, J.—[See IV. A : Moll. N. Hebrides.]

The following supposed new species:—*Neritina perfecta*; *N. exclamatonis*; *N. françoisi*; *N. elephas*; *N. subgranosa*; *N. horrida*; *Navicella splendens*; *N. françoisi*; *N. concentrica*; *Helicina novella*; *Melampus arctius*; *M. enhalius*; *M. dignus*; *Placostylus françoisi*; *P. hebridarum*.

Newcombe, C. F.—"Some New or Rare Species of Marine Mollusca recently found in British Columbia." Nautilus, x., 16-20.

The list of species contains some new names, but without descriptions.

Pilsbry, H. A.—"Note on *Bulimus hanleyi* and *B. coronatus*." Nautilus x., 46, 1896.

Synapterpes n. gen. for these species; type, *B. hanleyi*.

- Pilsbry, H. A.—"A New Species of *Pomatiopsis*." *Nautilus* x., 37-8, 1895.
P. hinkleyi, from Alabama.
- Pilsbry, H. A.—"A New Species of *Bulimus*." *Nautilus* x., 41, 1895.
Anctus (?) *stearnsianus*, from Argentina.
- Pilsbry, H. A.—"A New Variety of *Punctum*." *Nautilus* x., 21-2, 1895.
P. conspectum var. *pasadanæ*.
- Pilsbry, H. A.—"A Remarkable Central American Melanian." *P. Ac. Philad.*, 1896, pp. 269-70, fig.
Pachycheilus dalli, n. sp.
- Pilsbry, H. A. and Vanatta, E. G.—"Catalogue of the Species of *Cerion*, with descriptions of New Forms." *P. Ac. Philad.*, 1896, pp. 315-38, pl. xi.
New species:—*C. regina*; *C. sarcostomum*; *C. abacoense*; *C. tridentatum*; *C. eleutherae*; *C. blandi*; *C. multistriatum*; *C. basistriatum*; *C. duplodon*; *C. hyperlissum*. Also some new varieties.
- Pilsbry, H. A. and Vanatta, E. G.—"Revision of the North American Slugs: *Ariolimax* and *Aphallarion*." *P. Ac. Philad.*, 1895, pp. 339-50, pls. xii-iv, fig.
Aphallarion buttoni; n.g. et sp.
- Roper, E.—"A Word about *Sphaeria*." *Nautilus*, x, 29, 1896.
- Simpson, C. T.—"The Mussels (*sic.*) Scars of Unio." *Nautilus* x., 29-30, 1896.
"Seldom a mark of even specific value."
- Simpson, C. T.—(Rev. of Call's paper on the Unionidae of Kansas).
Nautilus x., 35-6, 1896.
Discusses some questions of Synonymy.
- Smith, E. A.—[See IV. A : Land Shells from N. Guinea.]
The following new species:—*Charopa nigrofusca*; *Macrochlamys papuana*; *Omphalotropis papuensis*; *Pupinella strubelli*; *Helicina pachystoma*.
- Smith, E. A.—[See IV. A : "L. and F. W. Mollusca of Trinidad."]
Subulina (*Nothus*) *urichi*, n. sp.
- Smith, E. A.—[See IV. A : Kolguev F.-water Shells.]
Limnaea ovata var. *nova kolguevensis*.
- Smith, E. A.—[See IV. A : Land Shells from S. Celebes.]
The following are new:—*Helicarion wallacei*; *Macrochlamys indifferens*; *Microcystina consimilis*; *M. consors*; *Xesta dimidiata*; *Hemiplecta bonthainensis*; *Chloritis howrsii*; *Calycia everetti*; *Clausilia celebensis*; *C. simillima*; *C. subpolita*; *C. usitata*; *Cyclotus pyrostoma*; *C. celebensis*.
- Smith, E. A.—[See IV. A : Land Shells of Selayar, &c.]
The following new species are described:—*Microcystina consueta*; *Xesta selayarensis*; *X. kalaoensis*; *Trochomorpha jampeana*; *Plectotropis crassiuscula*; *Planispira admirabilis*; *Helicostyla* (*Corasia*) *subtenuis*; *Hypselostoma everetti*; *Buliminus selayarensis*; *Cyclotus vicinus*; *Helicina kalaoensis*.
- Sterki, V.—"Descriptions of New *Pisidia*." *Nautilus* x., 20-1, 1896.
P. fallax and *P. vesiculare*.
- Sykes, E. R.—[See IV. A : "Polyplacophora of Pt. Phillip.]
Among the 22 species recorded in this paper the following are new:—*Ischnochiton* (*Haploplax*) *pura*; *I. wilsoni*; *Acanthochites pilsbryi*; *A. (Notoplax) glyptus*; *A. (N.) wilsoni*; *Chiton muricatus*, A. Ad., (now Tilesius) is re-named *C. limans*.
- Vayssièrre, A.—[See II., *Nautilus*.]
The author admits only three recent species of *Nautilus*:—*N. pompilius*, Linn.; *N. macromphalus*, Sow.; *N. umbilicatus*, List.

B. FOSSIL FORMS.

See also Vincent (IV. B.)

Broadhead, G. C.—[See IV. B: "Devonian of N. Missouri."]

Pleurotomaria providensis, n. sp.

Buckmann, S. S.—"Notes on Jurassic Ammonites." *Geol. Mag.* (N. S., Dec. iv.), vol. iii., pp. 425-1.

Cossmann, M.—[Rev. of *Oppenheim P. "Neue Binnenschnecken aus dem Vicentiner Eocän" (*Zeitschr. deutsch. geol. Ges.*)] *J. Conchyl.*, xliii., pp. 187-8 (1895) 1896.

Cossmann, M.—[See IV. B: "Moll. éocène. Loire-Inf."]

The following spp. nn.:—*Limæa bourdoti*; *L. gautensis*; *L. adela*; *Bulimus dumasi*; *Auricula simplex*; *A. citharella*; *A. houdasi*; *Scarabus bonneti*; *Ophicardelus sinuosus*; *Marinula labrosa*; *Siphonaria granicosta*; *Actæon dumasi*; *Crenilabium suturatum*; *Scaphander tenuistriatus*; *Bullinella brachymorpha*; *B. rideli*; *Plicobulla* (n. sg.) *dumasi*; *Cylichnella bourdoti*; *Amphisphyra subcylindrica*.

Crick, G. C.—"On *Goniatites exultans*, Phillips, and *Nautilus tetragonus*, Phillips, with a list of the species belonging to the genus *Subclymenia*." *Geol. Mag.* (N.S. Dec. iv.), vol. iii., pp. 413-19, figs., 1896.

Dollfus, G. and Dautzenberg, P.—"Description d'une nouvelle espèce de *Chlamys des faluns de l'Anjou*." *Bull. Soc. Ouest France*, vi., 1-3, 1896.

C. (Pallium) apollo, n. sp.

Engel, ——"Ueber einige neue Ammonitenformen des schwäbischen Jura." *Jahresh. Ver. Württemb.*, vol. 52, pp. lxiv.-lxxvi., 1895.

Landois, H.—[See III., "Riesen-Ammoniten."]

Pachydiscus seppenradensis, n. sp.

Mayer-Eymar, C.—"Descriptions de Coquilles fossiles des terrains tertiaires supérieurs (suite)." *J. Conchyl.*, xliii., pp. 152-64, pls. vii., 1-5, viii. (1895) 1896.

The following new species:—*Pectunculus varicostatus*, *Cardita guillemetiae*, *Nerita dujardini*, *N. oxystoma*, *N. proserpine*, *Natica dufrenoyi*, *N. epigonina*, *N. johanna*, *N. lunata*, *N. turonensis*, *N. virginialis*, *Ficula fischeri*.

Monod, G. H.—"Une espèce nouvelle à la Hève." *Rev. Scient.* (s. 4) v., 59, 1896.

Close to *Emarginula sancta-cristinae*.

Oppenheim, P.—[See IV. B: "Das Alttertiär der Colli Berici."]

The following new species of Mollusca:—*Pecten venetorum*; *Lucina astarte*; *L. consors*; *Cardium minarum*; *C. peregratum*; *Cytherea lucinaeformis*; *Psammobia granconensis*; *Corbula leonina*; *Patella cassis*; *Calliostoma salomoni*; *Trochus leoninus*; *T. granconensis*; *Collonia beyrichi*; *Dischelix beyrichi*; *Littorina zwenedensis*; *Turritella lapillorum*; *Siliquaria anguiniiformis*; *Cerithium rauffi*; *C. juliae*; *C. vulcaniiformis*; *Bittium subplicatum*; *Marginella pseudovoluta*; *M. amphora*; *Bulla magnifica*; *B. incisa*; from Zovence. *Modiola postalensis*; *Cardita bericorum*; *C. granconense*; *Marginella quinquisplicata*; *Voluta bericorum*; from Grancóna. *Cerithium vivarii* nom. mut. = *C. elegans* Desh. (non Blainv.) = *C. winkaui*, Tourn.

Pavlov, A. P.—[See IV. B.]

Part ii. and pl. xxvii. treat of "the English and German Species of *Aucella*."

Pompeckj, J. F.—[See IV. B: "Ammoniten des schwäbischen Jura."]

The author divides the Swabian species of *Lytoceras* into three groups: (a) that of *L. fimbriatum* (Sow); (b) of *L. villae*, Menegh; and (c) that of *L. articulatum* (Sow).

The following are the new species:—*L. salebrosum*, *L. coarctatum*, *L. irregulare*, *L. rugiferum*, *L. taeniatum*.

Tate, R.—[See IV. B: "Horn Exped."]

The following new species of Mollusca are described and figured:—*Orthoceras ibiciforme*, *O. microlineatum*, *O. larapintense*, *O. chewingsi*, *Endoceras arenarium*, *Trochoceras recticostatum*, *Eunema larapinta*, *Scalites* (?) *eremos*, *Pleurotomaria larapinta*, *Isoarca etheridgei*, *I. eastii*, *I. corrugata*, *I. orbicularis*, *I. crassatellaeformis*, *I. opiformis*, *I. wattii*, *Palaearca wattii*, *P. tortuosa*, *Pteronites micans*.

Vincent, E.—"Description d'un bivalve nouveau trouvé dans le Landenien inférieure." Ann. Soc. malac. Belgique, xxix. (1894), pp. xxii-iv., 1 fig., 1896.

Arcomya (*Argvromya*) *fallax*, n. sp.

Vincent, E.—[See IV. B: "Belgian Eocene *Neritae*."]

N. daciei, n. sp.

Vincent, E.—[See IV. B: "Pinna."]

The following new species:—*P. consobrina*, *P. propinqua*.

Vincent, E.—"Description d'un bivalve nouveau (*Periploma rugosa*) de l'étage Panisélien." Ann. Soc. malac. Belgique, xxix. (1894), pp. lxvii-iii., 1 fig., 1896.

Vincent, E.—Note préliminaire sur *Limopsis*. Proc.-Verb. mal. Soc. Belg., 1896, pp. xxxiv-xxxix., figs.

Six species are found in the Belgian Eocene, of which *L. lucida* is described as new.

Vincent, G.—"Une nouvelle espèce du genre *Chlamys*." Ann. Soc. malac. Belgique, xxix. (1894), pp. lix-x., 1896.

C. flandrica, n. sp.

Vincent, G.—[See IV. B: "Sabels Landeniens."]

Chlamys briarti and *C. bayeti*, nn. spp.

II. ANATOMY, HISTOLOGY, DEVELOPMENT AND PHYSIOLOGY.

Amaudrut, A.—"Contribution à l'étude de la région antérieure de l'appareil digestif chez les Sténoglosses supérieures," C. R. Ac. Sci., cxxii., 1424-7, 1896.

Auerbach, L.—"Untersuchungen über die Spermatogenese von *Paludina vivipara*." Jena, zeitschr, xxx, 405-554, pls. xxi-ii., Bibl., 1896.

Babor, J. F.—"Über die wahre Bedeutung des sog. Semper'schen Organes der Stylommatophoren." S. B. böhmisch Ges. 1895, 20 pp., 2 pls., 1896.

The Author holds that the so-called Semper's organ represents a buccal salivary gland and homologizes it with the ant. salivary glands of the Cephalopoda, the pharyngeal glands of the Amphineura, the buccal glands of the Prosobranchs, and the 'gland. ptyalinae' of the Opisthobranchiata. The Semperian glands are ectodermal in origin, being derived from the stomadaeal epithelium.

*Bedot, M.—"Note sur les cellules urticantes." Rev. Suisse Zool. iii., 533-9, 1896.

- Bergh, R.**—"Ueber die gattung *Doriopsilla*." Zoöl. Jahrb. Syst., ix. 454-8.
- Bergh, R.**—"Beitrag zur Kenntniss der gattungen *Narica* und *Onustus*." Verh. Ges. Wien. xlv., pp. 200-12, pls. ii.-iii., 1895.
Anatomy, &c. of *N. cancellata* (Chem.) and *O. trochiformis*, Born.
- Bernard, F.**—"Scioberetia australis, Type nouveau de Lamellibranche." Bull. Sci. France, Belgique, xxvii., 364-89, 90-5, 3 pls, 1896.
- Bisogni, C.**—"Le terminazioni nervosi nelle fibre lisce delle tuniche muscolari del tubo digerente del *Limax subfuscus* (Lin.) e del *Limax agrestis* (Lin.)" Anat. Anz. xii., 249-57., 4 figs., 1896.
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IV. DISTRIBUTION AND FAUNA.

A. RECENT FORMS.

See also **Arnold** (IV. B), **Branch** (III.), **Brandt** (III.), **Dall** (I. A), **Kennard** (III.), **Ihering** (I. A.), **Newcombe** (I. A), **Scott** (VI.), **White** (III.)

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NOTE.

Corasia lauræ, Gude.—Testa imperforata, orbiculate depressa, tenuis, obliquis creberrimis striis distincta, quae striis spiralibus decussantur; subpellucida, nitida, pallide coerulea; media pars anfractus ultimi vivide coerulescens, fascia lutea sub sutura ornata; spira convexa, obtusa; apex pallide lutea vel albida; sutura leviter impressa; anfr. 4½, convexi; periphæria acute carinata, pars superior paulum crenulata; anfr. ultimus antice breviter deflexus; apertura obliqua, subtrigona; peristoma simplex, tenue, margine superiori paulum expanso, gibboso, luteo, basali breviter reflexo, columellari arcuate declivi, compresso, paulum excavato, ex albido coerulescens.—Diam. maj. 19-25, min. 16-22, alt. 11-13 mm.



Corasia lauræ. Gude.

Hab.—North Luzon, Phillipine Islands.

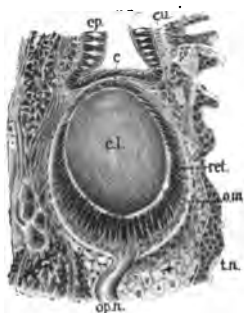
Shell imperforate, orbiculate depressed, thin, obliquely and closely striate, decussated with spiral lines, sub-pellucid, shining, pale blue; the middle of the last whorl vivid blue, with a yellow band under the suture; spire convex, obtuse; apex pale yellow or whitish; suture slightly impressed; whorls 4½, convex; periphery acutely keeled, the upper side of the keel slightly crenulate; last whorl shortly descending in front; aperture oblique subtrigonal; peristome simple, thin; upper margin slightly expanded, gibbous, yellow; basal margin shortly reflexed; columellar margin arcuately sloping, compressed, slightly excavated, bluish white.

The shell here figured was received by me from Mr. Hugh Fulton, of 216, Fulham Road, London, under the name of *Corasia psittacina*, Desh., but on comparison with the description and figure of that species, "Journal de Conchyliologie," ix., (1861), p. 350, t. 16, f. 3-5, it was evident that the two shells were distinct, and this opinion was confirmed by an examination of the specimens of *Corasia psittacina* in the British Museum collection. Although undoubtedly belonging to the phylum of *Corasia psittacina*, the characters which separate *Corasia lauræ* from that species, are sufficient to warrant its being raised to specific rank, and as it does not appear to have been previously characterized, I venture to publish it as a new species. It differs from *Corasia psittacina* in having the whorls more flattened; it has an acute compressed keel which is crenulated above, while in *Corasia psittacina*, the periphery is rounded and sub-angular; the last whorl is less widened towards the aperture, more contracted behind the peristome, and abruptly descending in front; the aperture is more triangular in outline, the margins are more approximating, and the columellar margin is more arcuate and less sloping. All the specimens which Mr. Fulton obligingly showed me, six or seven in number, agreed in the above-noted characters, but, as already indicated, some variation in size was observable. This beautiful species is named in honour of Miss Laura Andrew.—(SCIENCE-GOSSIP, New Series, vol. iii., August, 1896, p. 57. By kind permission of the Editor).

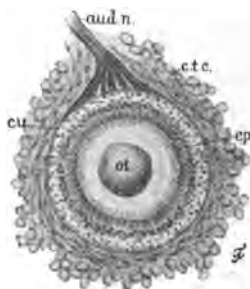
REVIEWS.

A Monograph of the Land and Freshwater Mollusca of the British Isles, by J. W. TAYLOR, F.L.S., Part III. Taylor Bros., Leeds, pp. 129-192, figs. 287-377 (6/-).

The same care and attention to detail on the scientific side and the same excellency as regards artistic production which has, up to the present, characterized this Monograph, is once more evident in the present number.



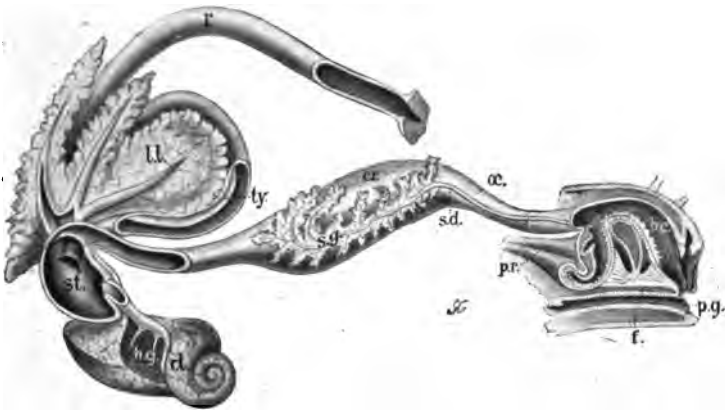
"FIG. 311." Eye of *Helix pomatia*, highly magnified (after Simroth). *c.*, inner cornea; *cu.*, cutis; *c.l.*, crystalline lens; *ep.*, epithelium, becoming thin and transparent, and forming the outer cornea; *o.m.*, outer membrane or sclera; *op. n.*, optic nerve; *ret.*, retina; *t. n.*, tentacular nerve.



"FIG. 337." Otocyst of *Anodonta cygnea*, highly magnified (after Simroth). *aud. n.*, auditory nerve; *c. t. c.*, connective tissue cells; *cu.*, cuticle or enclosing membrane; *ep.*, ciliated and sensory epithelial cells, supported upon cellular tissue; *ot.*, otolith.

The instalment is again devoted to those general considerations which are so useful to the student of malacology and so absolutely necessary, one would say, to those who wish to work at our British non-marine shells, but who

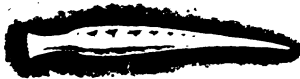
have no knowledge of zoölogy nor of molluscan anatomy. Part III., after a few pages on which the description of the shell is completed, and a list of papers appertaining to this portion of the subject, deals with anatomy as far as those forms go, which come within the scope of the Monograph. There are generalizations given that apply to the Gastropoda and Pelecypoda, while the snail and fresh-water mussel are described in detail, as types of these classes respectively. This part of the work is elaborately illustrated by original drawings and by others, many of them "after Howes"; it must be allowed, too, that these latter are seen to greater advantage in the Monograph than on the crowded lithographic plates of Howes' "Atlas of Biology." Some specimens of the illustrations are here given through the courtesy of Mr. Taylor, and Figure "316" will give an idea of the anatomical representations, while Figures "311," "337," and "329" will shew the detail that is gone into.



"FIG. 316." Alimentary canal of *Helix aspersa* with appended glands dissected out and seen from the right side. The generative, circulatory, excretory and nervous systems removed and the buccal cavity, stomach, bile ducts, intestinal canal and pedal gland opened up (after Howes).

b.c., buccal cavity, showing radula, radular sac and jaw; cr., crop; f., foot; h.g., hermaphrodite gland or ovotestis; l.l., left lobe of liver; o.e., oesophagus; p.g., pedal gland; p.r., pharyngeal or buccal retractor; r., rectum; pl., posterior lobe of the liver; s.d., salivary duct; s.g., salivary gland; s.t., stomach; ty., typhlosole.

The statement is made (p. 184) that a fuller account of the organs individually," detailing the differentiations in structure and function they each undergo and referring to the phylogenetic and other points of interest in connection therewith;" the last eight pages form the beginning of this account



"FIG. 329." Dart of *Helix aspersa* $\times 4$.

which should prove exceedingly interesting to judge by the instalment given which completes the head and its organs and begins the "pedal or ventral region." An interesting figure shews the underside of *Helix aspersa* seen from below through a slip of glass on what it is crawling.

In conclusion let one say that Mr. Taylor has compiled this portion of his book with such sound judgment that ever those who have been conchologists

in the restricted sense of the word will not weary of the details which he has been so bold as to include, and the hope may be expressed that the small Malacological public may thus be materially augmented.

The Collector's Manual of British Land and Freshwater Shells, by LIONEL E. ADAMS, B.A., Taylor Bros., Leeds, 8vo., 214 pp., 10 plates, (8/-; with coloured plates, 10/6.)

One is often asked by those who are attracted to the study of our land and freshwater shells, to name a book which they might obtain as a guide in following the fancy that they have taken. Up to the present, it has been difficult to find a work which shall possess the several necessary qualifications, for the good books are mostly out of print, which also means out of date, and therefore not advisable for a beginner to have, even if he be prepared to give the price that will be asked when a copy comes into the market.

Mr. Adams' "Collector's Manual" seems "to fill a gap" so to speak, and besides being up-to-date and of reasonable price, does really enable even those who know nothing about the subject, to discover the name of a shell unknown to them. The reviewer tested the book by giving it and two typical species to an absolute novice, who found the proper generic and specific names on the first trial in each case without any difficulty.

It would not be doing justice to the book, to leave the impression that it is only suitable for beginners; it is very pleasant reading to "an old hand," and the experienced collector may also find the "Manual" of considerable service. One can here find an opportunity for saying a word in praise of the tabular form of comparison which one is glad to see that Mr. Adams adopts on a number of occasions with a large measure of success. The writers of Faunas and, perhaps, more often of Floras seem to forget as a rule that the poor individual who has taken upon himself to name a species of animal or plant often has but that one species before him. In this case such remarks as "not so large as the last" or "like the four last species but with smaller flowers" only savour of the classical expression, "about as big as a lump of chalk" and not being descriptions at all are just so much waste of words. It must not be imagined that even Mr. Adams is absolutely definite in all cases, but taken as a whole his comparisons are really helpful.

There is a very good introduction to the Manual on methods of collecting and preserving shells, but passing on to the systematic part one cannot as a "lumper" (which is the name used in the preface) help thinking that the space given up to a lot of indefinite varieties might, with greater usefulness, have been devoted to a good synonymy of the various species. In looking through this latter part one notices many praiseworthy emendations, though, while alterations were being made, *Hyalinia*, which cannot stand for the shells known until recently as *Zonites* should have been superseded by *Vitrea* as pointed out by Mr. Smith in his presidential address to the Conchological in 1890;* this last name is however used by Mr. Adams as a sub-generic title, and containing rightly *V. crystallina*. Mention is made as a rule when species are ovo-viviparous, and a note might well have been added to the same effect in the case of *Clausilia biplicata*, one of the synonyms of which is *C. vivipara*, Held. A glossary is given, and the pronunciation of classical names is indicated by accents, but *Limnaea pereger* still retains its wrongful spelling of *peregra*. Furthermore, it should be pointed out that the first specimens of *Paludestrina jenkinsi* received by Mr. Smith, who named the species, were not given to him by Mr. Jenkins from Plumstead, but by Mr. Walter Crouch from Becton.† Again *Anodonta anatina* is still retained as a good species in spite of the opinions held to the contrary by many good observers, and *Arion* should come under Helicidae.

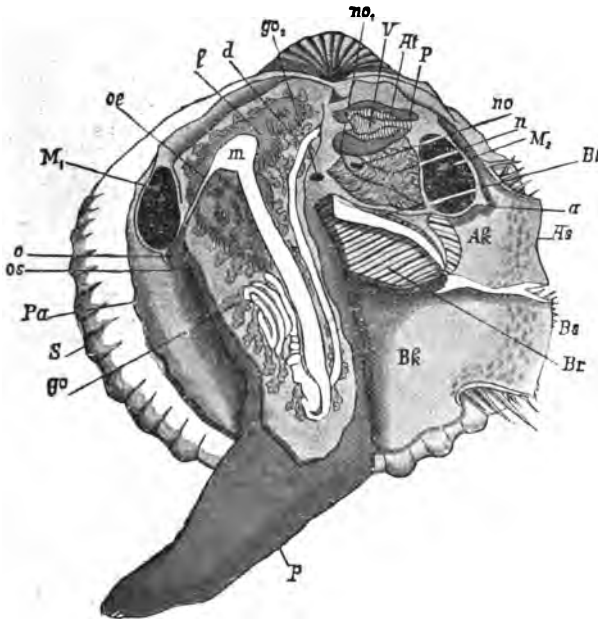
The illustrations on the plates are with a few exceptions good while the frontispiece which is the reproduction of a photograph of the smaller *Pisidia* is excellent. The Distribution Tables are a useful feature of the work.

* J. of Conch., vol. vi. (1891) p. 339.

† Essex Nat., vol. iv. (1890) p. 212.

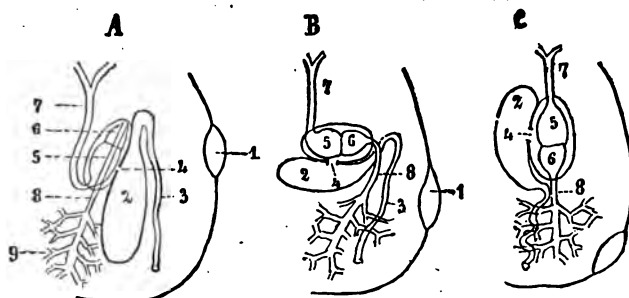
Text-book of Comparative Anatomy by DR. ARNOLD LANG, translated by HENRY M. BERNARD, M.A., and MATILDA BERNARD, Part III., London (1896) Macmillan & Co., Chapter I, Mollusca, 283 pages 8vo, 222 Figures, Bibliography (17/- nett).

In the last number of THE JOURNAL (p. 27) it was stated that the molluscan portion of this volume (in which also the Echinodermata and Enteropneusta are described) is an improvement on the original German edition in-so-much as it "has been revised by Mr. B. B. Woodward and an index added," and is, as it stands, "undoubtedly the most reliable and most up-to-date text-book of molluscan morphology."

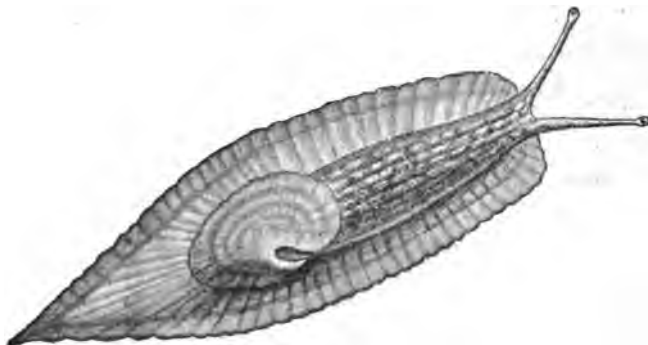


"FIG. 26." Anatomy of *Cardium tuberculatum* left aspect (after Grobben, Leuckart and Nitsche, Zool. Wandtafeln) *p.*, foot; *go.*, gonad; *S.*, shell; *Pa.*, mantle; *os.*, labial palps; *o.*, mouth; *M.*, anterior adductor muscle; *oe.*, oesophagus; *m.*, stomach; *l.*, digestive gland; *d.*, intestinal canal; *go.*, genital aperture; *no.*, pericardial aperture of the kidney; *V.*, ventricle; *At.*, auricle; *P.*, pericardium; *no.*, aperture of the kidney in the mantle cavity; *n.*, kidney; *M.*, posterior adductor; *Bl.*, point of concrescence of the right and left ctenidia behind the foot; *a.*, anus; *Ak.*, anal chamber of the mantle cavity with anal siphon *As.*; *Bk.*, branchial chamber of the same cavity with branchial siphon *Bs.*; *Br.*, ctenidium.

The book consists of a systematic review to begin with (see next page for classification adopted) but the main portion is devoted to sections having an organ or systems of organs for a heading under which each class is discussed in turn, while interspersed are other no less valuable divisions dealing with the primitive mollusc, phylogeny, ontogeny, parasitic and attached gastropods, and an exhaustive attempt to explain the asymmetry of the gastropoda. By the kindness of the publishers one is able to give three figures which are typical of the treatment accorded to general anatomy ("Fig. 26") to comparative anatomy ("Fig. 14") and to external characteristics ("Fig. 13.")



"FIG. 74." Diagrams to illustrate the changes in position in the pallial organs of *Daudebardia* and *Testacella* (adapted from figures by Plate). A., *Daudebardia rufa*; B, Hypothetical stage; C, *Testacella*. 1, respiratory aperture; 2, kidney; 3, ureter or urinary duct; 4, reno-pericardial aperture; 5, ventricle; 6, auricle; 7, aorta; 8, pulmonary vein; 9, pulmonary vascular network.



"FIG. 13." *Peltella palliolum* (Bulimulid, after Férussac).

Classification adopted,		
Class I. AMPHINEURA	Sub-order 2. Stylomatophora	Order i. Protobranchia
Order i. Placophora	(a) Monogonopora	Order ii. Filibranchia
(Polyplacophora)	(b) Digonopora	Order iii. Pseudolamelli-
sive Chitonidae	Order iii. Opisthobran-	branchia
Order ii. Aplacophora	chiata	Order iv. Eulamelli-
sive Solenogastres	Sub-order 1. Tectibranchiata	branchia
	(a) Cephalaspidae (including Ptero-	
	poda thecosomata)	
	(b) Anaspidae (including Pteroda-	
	gyuatomata)	
	(c) Notaspidae	
Class II. GASTRODODA	Sub-order 2. Ascoglossa	Sub-order 1. Submytilacea
Order i. Prosobranchiata	(a) Steganobranchia	Sub-order 2. Tellinacea
Sub-order 1. Diotocardia	(b) Cirobranchia	Sub-order 3. Veneracea
(a) Zeugobranchia (Rhipidoglossa	(c) Pterobranchia	Sub-order 4. Cardiacea
Aspidobranchia)	(d) Abranchia	Sub-order 5. Myacea
(b) Azygobranchia	Sub-order 3. Novibranchia	Sub-order 6. Pholadacea
(c) Docoglossa	(a) Holohepatica	Sub-order 7. Anatinacea
Sub-order 2. Monotocardia	(b) Cladohepatica	Order v. Septibranchia
(Pectinibranchia)		
(a) Architaenioglossa		
(b) Taenioglossa (includes Hetero-	Class III. SCAPHOPODA	Class V. CEPHALOPODA
poda)		Order i. Tetrabranchia
(c) Stenoglossa		Order ii. Dibranchia
Order ii. Pulmonata	Class IV. LAMELLI-	Sub-order 1. Decapoda
Sub-order 1. Basomatophora	BRANCHIA	Sub-order 2. Octopoda

W. M. W.

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VOL. V.

LIST OF THE CLAUSILIAE OF SOUTH AMERICA
WITH THE DESCRIPTION OF A NEW
SPECIES.

By E. R. SYKES, B.A., F.Z.S.

(PLATE IV.)

The species of *Clausilia* already known, belonging to the South American group, appear to be the following:—

PORTO RICO.

C. tridens, Chemn.

UNITED STATES OF

COLOMBIA.

C. bartletti, H. Ad.

C. blandiana, Pfr.

var. *ciocolatina*, Ancey.

C. bogotensis, Bttg.

C. dohrni, Pfr.

Synonym *C. perplexa*,
Sykes.

C. epistomium, Küster.

Synonym *C. pseud-*
epistomium, Brgt.

C. funcki, Pfr.

C. karsteniana, Döhrn.

C. magistra, Sowerby.

C. maranhonensis, Albers.

C. perarata, von Martens.

C. stylina, Ancey.

VENEZUELA.

C. cyclostoma, Pfr.

ECUADOR.

C. bourcierii, Pfr.

C. buckleyi, Higgins.

C. crossei, Hidalgo.

C. deyrollzi, Ancey.

C. perezi, Jousseaume.

C. rehrei, Jousseaume.

PERU.

C. adamsiana, Pfr.

C. austa, Bttg.

C. andeloca, Morelet.

C. angrandi, Morelet.

C. chacaensis, Luborm.

C. filocostulata, Luborm.

C. flachi, Bttg.

C. jolyi, Bttg.

C. malleolata, Phil.

C. peruana, Trosech.

C. quadrata, Bttg.

C. raimondii, Phil. (1867)
(non *C. raymondi*, Bgt.,
1863)

C. slosarskii, Luborm.

C. steeriana, Sykes.

C. taezanowskii, Luborm.

C. trigonostoma, Bttg.

BOLIVIA.

C. boliviana, Sykes.

C. orbygni, Ancey.

Where these species have been placed in a subgenus at all, the name *Nenia* has been used. This was first published by H. & A. Adams (1855) who adopted the section from Charpentier (1852), he having only designated it by a number. The species so placed were in each case *C. epistomium* and *C. tridens*. Some authors have located *C. dohrni* in *Balea*, but since the type of this genus is *B. perversa*, L., such reference seems erroneous.

While certain of the species fall easily into groups, the others still appear to be isolated forms, and our present knowledge of the South American *Clausiliae* is insufficient to enable us to properly separate them, any endeavour to do so being premature.

The species I described as *C. perplexa* appears to me now to be only a form of *C. dohrni*, and it has therefore been placed in the synonymy of that species. I think it is also very probable that *C. magistra* is a variety of *C. karsteniana* and that *C. jolyi* is a form of *C. filocostulata*: since, however, I have not seen authentic specimens of some of these, I hesitate to definitely unite them.

C. funcki, Pfr., is a difficult species to classify; still it appears to belong to the *Clausilia* group, though of a somewhat aberrant form.

C. cyclostoma was described by Pfeiffer as from the Korean Archipelago; subsequently he stated that it was probably South American, while in the 'Nomenclator Heliceorum Viventium' it appears as from Venezuela, and a specimen in my collection is said to have come from "Quito, Peru," which I assume refers really to the Quito in Ecuador. The real habitat therefore remains uncertain.

Bourguignat varied the spelling of *andecola* to *andicola*, that of *dohrni* to *dorhni* (err. typ.?), and changed *maranhonensis* to *maranhonica*: these alterations appear to me to be unnecessary.

***Clausilia evae*, n. sp. (Plate IV., Figures 1, 2, 3.)**

Testa fusiformis, tenuiuscula, corneo-fuscula, parum nitens; apex obtusus, non decollatus; anfr. $8\frac{1}{2}$ plano-convexi, lente accrescentes, primi laeves, reliqui sat distanter costulato-striati, costulis undulatis, interstitiae laeves, anfr. ultimus ante aperturam multius costulato-striatus quam anfr. penultimus, subtus modice angustatus, basi rotundatus, applanatus; sutura impressa; apertura magna, fere circularis, basi recedens, peristomate con-

tinuo, soluto, late reflexo, leviter incrassato. corneo-albido; lamellae modicae, superior marginalis, fere verticalis, inferior valde oblique ascendens, sub-cumellaris nulla; plica principalis curta, valida; lunella conspicua, valida, arcuata. Alt. 4.1 millim.; diam. max. 8.5 millim.; alt. apert. 9 millim.; lat. apert. 9 millim.

Habitat: South America.

I regret not to be able to give the exact habitat of this handsome species, the single specimen of which is in the collection of Miss de Burgh, who kindly lent it so that it might be figured and described.

While dealing with these forms, a word with regard to '*Bulimus clausilioides*, Reeve,' may be of interest. This shell has at various times been placed in *Balea* and *Temesa*. The former is clearly erroneous; with regard to the latter, the original species so placed were *australis*, Forbes, *clausilioides*, Reeve, and some forms of *Alopi*a. Mr. Hedley has recently transferred the former species to *Perrieria*, and Mr. Pilsbry following this has left *clausilioides* as the type of *Temesa* in his work on the Bulimoid forms.

This result appears to me to be very unsatisfactory. *Australis* was the first species of *Temesa*, and therefore when it proved not to be a *Coeliaxis*, as Mr. Hedley showed, it should have stood as the type of the genus. It appears so for two reasons: firstly, because *Temesa* has more than 20 years' priority over *Perrieria*; and secondly, because *australis* does not accord well with *clausiliaeformis*, Tapp.-Canefri, which is the type of this latter genus, though the author's somewhat vague original description would cover it. I think, therefore, that *australis* must stand under *Temesa* and *clausilioides* will require, if it is to be placed in a section by itself, a new sectional name.

EXPLANATION OF PLATE IV.

- | | | |
|--------------------------------|---|--|
| <i>Clausilia evae</i> , n. sp. | { | FIGURE 1. The shell life-size. |
| | | FIGURE 2. Mouth of the shell $\times 2$. |
| | | FIGURE 3. The same seen from behind $\times 2$. |

CURRENT LITERATURE.

By E. R. SYKES, B.A., F.Z.S., and S. PACE, F.Z.S.

It is hoped that all Malacologists will aid in making this Bibliography as complete and useful as possible. Writers, both at home and abroad, are especially asked to send in copies of their respective papers for review.

We regret that it is not possible for us this quarter to present the Palaeontological portion of our Bibliography. Mr. Pace, owing to his approaching departure from England, has been unable to attend to it, and, as yet, we have not found a recorder who, being qualified and having sufficient opportunities, has been able to spare the necessary amount of time.

An attempt has been made, also, to save space by not inserting the names of authors, &c., in more than one section: cross-references at the close of each section being ample for the purpose. We believe that our readers will approve the change, as they will be enabled to survey the whole field in a smaller compass. The practice of inserting works "not seen" has also been given up, as otherwise works are recorded when only some favoured person has had the opportunity of perusing them. A striking feature of this quarter is the small amount of strictly anatomical work.

I. CLASSIFICATION AND NEW FORMS.

Ancey, C. F.—"Descriptions of some new shells from the New Hebrides Archipelago." *Nautilus*, x., 90-1.
Endodonta, *Melania*, and *Neritina*.

Boettger, Dr. O.—"Diagnosen neuer Clausilien." *Nach. Malak. Ges.*, 1896, 124-7.
Two species and three varieties from Asia Minor and Cyprus.

Brazier, John.—"On the new genus *Petterdiana*." *Proc. Roy. Soc. Tasmania*, 1894-5 [Aug., 1896], 105-6.
A new name (speaking strictly, not a new genus) for *Brazieria*, *Petterd* non Ancey; the type being the *Ampullaria tasmanica*, Ten.-Woods.

Clessin, S.—"Dentaliidae' in 'Conchylien-Cabinet.'" *Lief.* 422 and 424, pp. 48, pls. 11.
Rather incomplete.

Dall, W. H.—"Note on *Leda caelata*, Hinds." *Nautilus*, x., 70.
L. taphria nom. nov. = *L. caelata*, Hinds, non Conrad.

Dautzenberg, Ph., and Fischer, H.—"Dragages effectués par l'Hirondelle et par la Princesse-Alice, 1888-1895. I., Mollusques Gastéropodes [et Polyplacophores]." *Mém. Soc. Zool. France*, ix., 1896, pl. xv.-xxii.

This elaborate memoir forms a valuable addition to our knowledge of the deep-water molluscs found off the Azores and in the Mediterranean: the depths at which dredgings were made having varied from forty to four thousand metres. The total number of species recorded amounts to 153, of which no less than 86 are described and figured as new. They are distributed in the following genera:—*Acmaca* 1, *Actacon* 1, *Alvania* 2, *Calliostoma* 3, *Cerithiella* 4, *Cerithiopsis* 1, *Cyclostrema* 2, *Cylichna* 1, *Danilia* 1, *Emarginula* 1, *Eulima* 11, *Fissurisepta* 2, *Fusus* 1, *Glyphis* 1, *Iphitus* 2, *Leptothyra* 1, *Marginella* 1, *Mitromorpha* 2, *Natica* 2, *Philine* 2, *Pleurotoma* 21, *Propilidium* 2, *Pseudomurex* 1, *Ringi-*

cula 1, *Rissoa* 1, *Roxania* 1, *Scissurella* 1, *Solariella* 2, *Solarium* 2, *Tharsis* 2, *Tinostoma* 1, *Trophon* 2, *Turbonilla* 6, *Turricula* 1.

This vast proportion of new forms would have been even greater had it not been for the previous publication by Mons. Dautzenberg on the fauna of the Azores. It should be noted that *Kryptos elegans* is proposed as a new genus and species from Jeffreys' MSS.: it is placed between *Sipho* and *Fusus*.

Dollfus, G.—"Consideration sur la délimitation des espèces animales." *Feu. Jeun. Natural.*, an. xxvii., 3-6.

Fischer, see **Dautzenberg**.

Kobelt, Dr. W.—"Eine Najadee aus Turkestan." *Nach. Malak. Ges.*, 1896, 102-3.

Anodonta sogdiana, from Buchara.

Kobelt, W.—"Cumbella" in 'Conchylien-Cabinet.' *Lief.* 423, pp. 217-280, pl. 31-6.

Concludes his study of the group.

Marsh, W. A.—"New American *Unio*." *Nautilus*, x., 91-2.

Melville, J. Cosmo.—"Descriptions of new species of minute marine shells from Bombay." *P. Malac. Soc.*, ii., 108-116, pl. viii.

New species of the genera:—*Bittium* 1, *Cerithiopsis* 3, *Solarium* 1, *Rissoina* 2, *Adeorbis* 1, *Adis* 2, *Eulima* 1, *Syrnola* 1, *Oscilla* 1, *Myonia* 1, *Miralda* 1, *Odostomia* 2, *Pyrgulina* 2, *Turbonilla* 4, *Cingulina* 1, *Phasianella* 1, *Tellina*, 1. We must congratulate the artist on the plate.

Melville, J. Cosmo, and Ponsonby, J. H.—"Descriptions of new Terrestrial Mollusca from South Africa." *Ann. Mag. Nat. Hist.*, ser. 6, xviii., 314-8, pl. xvi.

New species of *Ennea* (2), *Subulina* (3), *Pupa* (1), and *Cyclostoma* (1). The new *S. laeocochlis* is a remarkable large sinistral form, and the authors suggest that, should a new genus be required, the name *Euonyma* should be used.

Melville, James Cosmo, and Standen, Robert.—"Notes on a collection of shells from Lifu and Uvea, Loyalty Islands, formed by the Rev. James and Mrs. Hadfield, with List of Species." *Journ. of Conch.*, viii., 273-315.

Though it might not be inferred from the title, this paper consists simply of the descriptions of 80 new marine species, with descriptive notes. The genera represented are:—*Murex* 1, *Nassa* 3, *Cumbella* 2, *Scalaria* 2, *Drillia* 3, *Mangilia* 24, *Clathurella* 7, *Daphnella* 2, *Mitra* 1, *Bittium* 4, *Cerithiopsis* 6, *Turbonilla* 1, *Pyrgulina* 1, *Syrnola* 2, *Alaba* 1, *Litiopa* 1, *Alvania* 1, *Rissoina* 7, *Barleeia* 1, *Rissoia* 2, *Mathilda* 1, *Euchelus* 1, *Leucorhynchia* 1, *Alcyna* 1, *Minolia* 1, *Solariella* 1, *Cadulus* 1, *Tornatina* 1.

Moellendorff, see **Quadras**.

Pilsbry, H. A.—"Notes on new species of Amnicolidae collected by Dr. Rush in Uruguay." *Nautilus*, x., 86-9.

Potamolithus is a new genus for the species from Uruguay of a similar type to the European *Lithogyphus*.

Pilsbry, H. A.—"Manual of Conchology;" series 1, parts 61a and 64 (contain vol. xvi., pp. i.-vii., 161-262, pls. 44-72, frontispiece), series 2, part 40 (contains vol. x., pp. i.-iv., 145-213, pls. 1, 41-51).

In the Marine series we commence with the family Oxynoeidae, in which *Dipterophysis* is a new sub-genus of *Lobiger*, from which it may be distinguished by having only a single pleuropodial lobe on each side; the type and only species is *L. souverbii*, Fischer, from Guadeloupe. *Lobiger viridis*, Nevill non Pease, is re-named *L. nevilli*. We then pass through the Runcinidae and Umbraculidae (Umbrellidae of some authors) to the Pleurobranchidae; these divide into Pleurobranchinae and Pleurobranchaeinae, which may be characterized by the presence or absence of a shell. *Gymnctoplax* is a new genus which may be separated from *Pleurobranchus* and *Oscanus* by the shell being

partly exposed by an orifice in the mantle: the type is *Pl. americanus*, Verrill. *Pleurobranchus scutatus*, Martens non Pease, is re-named *P. martensi*. British collectors will not be gratified to find that the specific name *tuberculatus*, Meckel (1808), is used, apparently quite correctly, for the shell they know as *Pleurobr. membranaceus*, Mont. (1811). Neda, H. & A. Ad. non Mulsant, is re-named *Euselenops*. An introductory classificatory note is given, in which the Cephalaspidea are divided into groups by the presence or absence of an operculum, and by the radula. Finally, an appendix to vol. xv.—we would we could write vols. i.-xv.—is given: in this, *Aliculastrum* is a new name for *Alicula*, Ehrbg. non Eichwald, and the Tectibranchiate monograph is carried up to 1896, thus concluding the first Marine series. We hope shortly to welcome the opening parts of another series on the Marine bivalves, and trust they will be even more brilliantly executed.

In the Land series, Mr. Pilsbry continues his study of the Bulimuli of the sub-genus *Bostryx*. Four new species are described, namely:—*B. metamorphus*, from Chili; *B. crofolasta* and *B. flagellatus*, from Balsas, Peru; *B. ventanensis*, from Argentina. New names are *B. subcactorum* (= *lichenorum*, Reeve non D'Orb.), *B. raimondianus* (= *spretus*, Phil. non Rve.), *B. dendritoides* (= *monticola*, Phil. non Roth.). An appendix to the volume is also given.

Ponsonby, see Melvill.

Quadras, J. F., and Moellendorff, O. F. von.—“Diagnoses specierum novarum ex insulis Philippinis.” Nach. Malak. Ges., 1896, 81-93.

Thirty-one new species, all unfigured and but curtly described.

Rolle, Hermann.—“Ein neues *Cardium* von der Nord-Japanischen Küste.” Nach. Malak. Ges., 1896, 113-5, plate.

Rolle, H.—“Diagnose (*sic*) eines neuer *Buccinum*.” Nach. Malak. Ges., 1896, 128.

B. martensianum, from Japan.

Simpson, C. T.—“Notes on the *parvus* group of Unionidae and its allies.” Nautilus, x., 57-9.

Smith, E. A.—“Natural History Notes from H.M. Indian Marine Survey Steamer ‘Investigator,’ Ccm. C. F. Oldham, R.N.—series ii., no. 22. Descriptions of new Deep-sea Mollusca.” Ann. Mag. Nat. Hist., ser. 6, xviii., 367-375.

New species of *Pleurotoma* 4, *Natica* 2, *Dentalium* 1, *Cardium* 1, *Yoldia* 1, *Cuspidaria* 1, *Myonera* 1, *Lyonsia* 1, and *Scrobicularia* 1: with critical notes on other species.

Sterki, Dr. V.—“Two new *Pisidia*.” Nautilus, x., 64-8.

Two more species added to the already somewhat swollen list of North American shells.

Sykes, E. R.—“On *Flammulina* (*Allodiscus*) *chion*, a new Helicoid Land-shell from New Zealand.” P. Malac. Soc., ii., 107, figs.

Sykes, E. R.—“Preliminary diagnoses of new species of non-marine Mollusca from the Hawaiian Islands. Part I.” P. Malac. Soc., ii., 126-132.

The following are described as new:—*Macrochlamys* 1, *Endoöonta* 2, *Leptachatina* 4, *Amastra* 4, *Newcombia* 1. The author discusses the genera *Microcystis* and *Macrochlamys* and their types.

Wagner, Dr. A. J.—“Die Arten des genus *Daudebardia*, Hartmann, in Europa und Westasien,” Denksch Akad. Wiss. Wien., lxii., 609-626, 5 plates.

Though reprints of this paper have been issued for some time, the volume containing it has only recently made its appearance. The author divides *Daudebardia* into four sections: *Rufina*, Clessin; *Libania*, Brgt. (to which he adds a new species from Transcaucasia); *Carfathica*, nov. sect. (type *D. himanowiczii*, n. sp., from Siebenburgen); and *Illyrica*, nov. sect. (type *D. stussinceri*, n. sp., from Croatia). Excellent figures of anatomy and shells are given.

Westerlund, C. A.—"Neue Centralasiatische Mollusken." Ann. Mus. Zool. Ac. Sci. St. Petersb., 1896, 181-198.

Various new species of land and freshwater Mollusca; no figures.

See also: In II., Bergh, Mazzarelli, Simroth, Sterki; in IV., Dall, Ihering, Locard, Pilsbry, Simroth.

II. ANATOMY, HISTOLOGY, DEVELOPMENT, AND PHYSIOLOGY.

Bergh, R.—"Beiträge zur Kenntniss der Coniden." Abh. Kais. Leop. Akad., lxx., 87-214, pl. i.-xiii.

We hope to refer to this later.

Brooks, W. K., and Drew, Gilman.—"Notes on the anatomy of *Yoldia*." Ann. Mag. Nat. Hist., ser. 6, xviii., 344-5.

Gude, G. K.—"Armature of Helicoid Land-shells" (continued). Sci. Goss., 1895, 125-8, 154-6, 178-181, figs.

Deals with *Corilla* and *Plectopylis* and figures several species.

Hornell, James.—"The eggs and young of Cephalopods." Journ. Mar. Zool., ii., 64-6, pl. vii., figs. A-C.

Hornell, James.—"The visual organs of the Mollusca." Journ. Mar. Zool., ii., 66-72, pl. vii., figs. I.-XI.

Joubin, L.—"Cephalopodes [du Campagne du 'Caudan']. Ann. Univ. Lyon, xxvi., 247-250, fig.

McMurrick, J. Playfair.—"The Yolk-lobe and the Centrosome of *Fulgur carica*." Anat. Anz., xii., 534-9, figs.

Mazzarelli, G.—"Intorno ad una nuova specie di *Phyllaplysia* (P. Fischer)." Boll. Soc. Nat. Napoli, ix., 81-2, figs.

P. paulini, n. sp., dealt with anatomically.

Simroth, Dr. H.—"Bronn's Klassen und Ordnungen des Thier-Reichs: Bnd. iii.: Mollusca: Lief. 22 and 23 (contain part 2, pp. 1-64). September, 1896."

Commences the account of the Gastropoda.

Sterki, Dr. V.—"The Systematic position of *Sphyradium* ("Pupa") *edentulum*, Drap." Nautilus, x., 75-6.

From an examination of the radula, Dr. Sterki arrives at the very interesting fact that this species is not a *Pupa* at all, but a Helicoid allied to *Punctum pygmaeum*, Drap.

III. BIOLOGY, HABITS, AND TERATOLOGY.

Adams, Lionel E.—"Albino forms of *Littorina rudis*, var. *tenebrosa*." Journ. of Conch., viii., 315.

Boycott, Arthur E.—"Erosion in Extra-Marine Mollusca." Sci. Goss., 1895, 114-6.

Cockerell, T. D. A.—"The Label List for Five-banded Shells." Sci. Goss., 1896, 137.

Crowther, J. E.—"The Common Pond Snail." Halifax Nat., i., 78-80.

Dall, W. H.—"Recent advances in Malacology." Science, n.s., iv., 770-3.

Edwards, Thos.—*Planorbis carinatus*, Müll., monst. *scalariforme*." Journ. of Conch., viii., 320, figs.

Guignou, ——" *Helix hortensis* avec ommatophore dichotomée." Feu. Jeun. Natural., An. xxvi., 240, fig.

Hornell, James.—"On surface tension as an aid to locomotion among marine animals." *Journ. Mar. Zoöl.*, ii., 59-60.

Nudibranchs, *Cypraea*, *Aplysia*, and *Pleurobranchus* all crawl on the water in an inverted position; while *Eolis* and *Cypraea* suspend themselves by mucous threads.

Kimakowicz, M. von.—"Biologische Notizen über Mollusken." *Verh. Mitth. Siebenburgen Ver.*, xlv. 57-8.

O'Connor, Frances Sarah.—"Spider carrying Snail-shells." *Irish Nat.*, v., 299.

Spider carrying a shell which "was packed with what appeared to be spiders' eggs."

Olney, Mary P.—"Odour of snails." *Nautilus*, x., 84.

Ormsbee, C. C.—"Influence of Environment upon the form and colour of *Helix alternata*." *Nautilus*, x., 63-4.

The colours vary with those of the decaying woods in which they are found; the shape also varies with the form and size of the crevices in which they live.

P[ilsbry], H. A.—" *Limnæa bulimoides*, Lea, resisting drought." *Nautilus*, x., 96.

Revived after being packed in cotton for 45 days.

Shackelford, Lewis.—"The Shell-boring of carnivorous Gastropods." *Journ. of Conch.*, viii., 315.

IV. DISTRIBUTION AND FAUNA.

Adams, Lionel E.—" *Limax marginatus*, Müll. (= *L. arborum*, B. Ch.), in Northamptonshire." *Journ. of Conch.*, viii., 251.

Adams, Lionel E.—"Interesting Kentish forms [of land shells]." *Journ. of Conch.*, viii., 316-320.

Bradshaw, Mrs. M. F.—"Extract from a note book." *Nautilus*, x., 82-4.
Relates to shore collecting in Newport, Cala.

Campbell, Mrs. E. D. G.—"Marine Shells on the Southern Californian Coast." *Nautilus*, x., 56-7.

Cooper, J. E.—"Note on the occurrence of *Petricola pholadiformis*, Lamk., at Shellness, Kent." *P. Malac. Soc.*, ii., 134.

Similar notes on same page by Crouch (from Cricksea and River Crouch) and Kennard (from Herne Bay).

Cooper, J. E.—"The new British Mollusc." *Sci. Goss.*, 1896, 147.

Crouch, W. E.—See Cooper.

Dall, W. H.—"Insular Landshell Faunas, especially as illustrated by the data obtained by Dr. G. Baur in the Galapagos Islands." *P. Acad. Sci. Philad.*, 1896, 395-459, pl. xv-xvii.

Opening with an account of previous researches on the Mollusca of the Galapagos Islands, Dr. Dall proceeds to discuss the knowledge we at present possess with regard to the habits and inter-island distribution of the species. The islands are divided into three groups—South-eastern containing 30, Central 24, and North-eastern 3 species. The total number of species and varieties found in the islands is 46, distributed in the following genera:—*Bulimulus* 34, *Trochomorphus* (?) 1, *Vitrea* 1, *Conulus* 1, *Pupa* 2, *Succinea* 4, *Leptinaria* 2, and *Helicina* 1. We have omitted from this reckoning such genera as *Siphonaria*, as we fail to perceive how they can be classified as "land shells;" indeed, many students will probably miss Dr. Dall's valuable notes (*e.g.*, on the genus *Williamia*), owing to the misleading nature of the title of this paper.

Dr. Dall then proceeds to discuss the surface characters—especially of the *Bulimuli*—and concludes that the peculiar crenulation or wrinkling of the surface which "is correlated with aridity or alkalinity of environment, may be regarded as having been impressed upon species which first gained a foothold in the arid region, and as having persisted to some extent in their descendants when the latter succeeded in reaching the upper and more congenial zones of the islands."

Further, he compares the fauna of the Galapagos Islands with that of other oceanic and isolated localities, and incidentally raises a question which, unfortunately, he does not proceed to solve: namely, why the species of *Endodonta* with basal lamellae are confined to oceanic islands? Finally, a valuable summary of the fauna both systematic and anatomical is given; the following is described as new: *Bulimulus nesioticus*; and figures are given of other species. We have to congratulate Dr. Dall on the publication of what will be the standard work on these islands.

Dall, W. H.—"On the American species of *Cyrenoidea*." *Nautilus*, x., 51-2.

One recent n. sp. (*C. floridana*, from Florida) and one n. sp. (*C. caloosaensis*) from Pliocene of S. Florida.

Dollfus, A.—"Les plages de la Manche." *Feu. Jeun. Natural.*, An. xxvii., 14-16, 29-30, 2 pls.

Drake, Mrs. M.—"Notes on some [Marine] shells of Puget Sound." *Nautilus*, x., 68-70.

Fagot, Paul.—"Faune Malacologique terrestre et des eaux douces et saumâtres de l'Aude." *Boll. Soc. Sci. de l'Aude*, vii., 171-213.

Gamble, F. W.—"Notes on a Zoölogical Expedition to Valentia Island, co. Kerry." *Trans. Manchester Micro. Soc.*, 1895, 60-66.

Garstang, Walter.—"On the Aplacophorous Amphineura of the British Seas." *P. Malac. Soc.*, ii., 123-5, pl. x.

Records four species and gives figures of them.

Horsley, Rev. J. W.—"Note on *Helix hortensis* near Dover." *Journ. of Conch.*, viii., 251.

Horsley, Rev. J. W.—"The Mollusca of Plumstead Marshes." *Journ. of Conch.*, viii., 262.

Hurst, C. Herbert.—"Fauna of Belfast Lough." *Irish Nat.*, v., 271-2.

Ihering, Dr. H. von.—"Zur Kenntniss der Sudamerikanischen *Voluta* und ihrer Geschichte." *Nach. Malak. Ges.*, 1896, 93-9.

Contains some interesting criticisms on Lahille's paper: two n. sp. are described, namely, *V. quemadensis* and *V. ameghinoi*, both from the Tertiary of Patagonia and nearly related to *V. brasiliana*, Sol.

Kennard, A. S.—See Cooper.

Kobelt, Dr. W.—"Die Mollusken-Fauna der Makaronesischen Inseln." *Jahrb. Nassauische Ver.*, xlix., 53-70.

Kobelt, Dr. W.—"Die Fauna der Galapagos." *Nach. Malak. Ges.*, 1896, 115-121.

Principally taken from Dall's paper.

Locard, A.—"Mollusques Testacés et Brachiopodes [du Campagne du 'Caudan']. " *Ann. Univ. Lyon*, xxvi., 129-245, pl. v.-vi.

Several new species.

Margier, E.—"Un mollusque terrestre nouveau, pour la Faune Française, *Pupa mortilleti*, Stabile." *Feu. Jeun. Natural.*, An. xxvi., 240.

Margier, E.—"Nouvelle station de l'*Azeca monodonta*, Fol. et Berillon." *Feu. Jeun. Natural.*, An. xxvii., 36.

McDougall, G.—"Third Report on the land and freshwater shells of Perth,

- Louth and Clackmannan." Trans. Stirling N. H. and Arch. Soc., 1895-6, 140-2.
- Oldham, Chas.—"*Helix fusca* and *Azeca tridens* in Denbighshire." Journ. of Conch., viii., 251.
- Oldham, C.—"Slugs in the Goyt Valley." The Naturalist, 1896, 354.
- Pilsbry, H. A.—"Notes on some West American Chitons." Nautilus, x., 49-51.
Includes the description of *Trachydermon sharpii*, a new species from Unalashka.
- P[ilsbry], H. A.—"Mexican Land Shells." Nautilus, x., 59.
- Pilsbry, Henry A., and Rush, William H.—"List, with notes, of land and freshwater shells collected by Dr. W. H. Rush in Uruguay and Argentina." Nautilus, x., 76-81.
This list contains the names of several n. sp., descriptions of which are to shortly appear.
- P[ilsbry], H. A.—"*Choanopoma* (*Ctenopoma*) *bahamense*, Shutt., at Key West." Nautilus, x., 96.
- Rush, see Pilsbry.
- S., R. F.—"Review of Adams' British Land and Freshwater Shells." Irish Nat., v., 285 6.
Some critical notes.
- Sandberger, Prof. von.—"*Pisidium ovatum*, Clessin, ein rest der Fauna der Eiszeit im Schwarzwald." Verh. Naturw. Ver. Karlsruhe, xi., 344-5.
- Shopland, E. R.—"Some further additions to the list of shells collected at Aden in 1892-5, classified in accordance with the Paetel Catalogue." Journ. Bombay Nat. Hist. Soc., x., 503-4.
- Smith, Edgar A.—"A list of the Land and Freshwater Mollusca of Trinidad" (conclusion). Journ. of Conch., viii., 241-251.
Three new species of *Bulimulus* (*Drymaeus*).
- Smith, Edgar A.—"A list of the Land Shells of the Islands of Batchian, Ternate, and Gilolo." P. Malac. Soc., ii., 120-2, figs.
Three very useful lists recording 43 species from Batchian, 21 from Ternate, and 39 from Gilolo. Two species of *Planispira* (*Cristigibba*) are described as new and figured, one from Gilolo, the other from Batchian.
- Smith, H.—"Some Land Shells of Michigan." Nautilus, x., 84.
- Stearns, R. E. C.—"*Purpura lapillus*, var. *imbricata*." Nautilus, x., 85.
- Tregelles, G. F.—"The Marine Mollusca of Cornwall." Journ. of Conch., viii., 252-262.
- Welch, R.—"Marine Mollusca of County Galway." Irish Nat., v., 274.
- Welch, R.—"Mollusca of Cavan Excursion." Irish Nat., v., 274.
- Winkley, Rev. Henry W.—"Casco Bay." Nautilus, x., 73-5.
Notes on land and marine collecting in Maine.
- See also: —In I., Ancey, Dautzenberg, Melvill, Pilsbry, Sykes, Wagner.

V. COLLECTING AND METHODS OF RESEARCH.

- Feltgen, Dr. E.—"Mollusken Terminologie. 'Fauna.'" Soc. Nat. Limb., 1896, 35-42, 59-63, 71-4, 94-8, 112-6, 137-45, 151-7.
- Johnson, C. W.—"Editorial Correspondence [relating to Museums of England]." Nautilus, x., 53-6.
- Johnson, C. W.—"Some notes on the Collection of Shells in the Museums of Paris, Berlin, and Amsterdam." Nautilus, x., 61-3.

VI. ECONOMICS.

- Dedekind, Alexander.—"Recherches sur la pourpre *Oxybatta* chez les Assyriens et les Egyptiens." Arch. Zoöl. Exper., iv., 481-516, pl. xi.
- Lacaze-Duthiers, H. de.—"Note sur la couleur de la pourpre tirée des Mollusques." Arch. Zoöl. Exper., iv., 471-480.
- Thorne, R. T., Bulstrode, H. T., and Klein, Dr.—"Oyster Culture in relation to Disease." 24th Ann. Rep. Local Govt. Board, 1894-5, Supplement 1895, pp. xxiii. and 174, pls. xvi.
- Shows that oyster beds are contaminated, and that the germs causing Typhoid Fever and Cholera live for many days in the shells of oysters kept in tanks where the water is constantly changed.

VII. BIOGRAPHIES.

- Henderson, John B., jun.—"Obituary—B. Schmacker." Nautilus, x., 72.
- Roberts, S. Raymond.—"Henry D. Van Nostrand." Nautilus, x., 93-4.
- Obituary: Died Oct. 8th, aged about 73.

NOTES.

Supposed New Varieties.—I am in favour of naming varieties, but it is decidedly objectionable to give the same name to more than one, or introduce as new those long ago described and named. I see on p. 37 a reference to *Limax maximus* var. *alba*, nov., L. E. Adams. If this is the albino form, it was named *megaspidus* in 1817, and is also the *candidus* of Lessona and Pollonera. And if it were not, the name *albus* could not be used, as it was employed in 1890 by Amstein for a variety which is not an albino. In the new "Collector's Manual," Mr. Adams also re-introduces some old forms. *Helix hortensis* v. *luteolabialis*, L. E. Ad., was first described by the writer, under the same name, in "Sci. Goss.," 1887, p. 67. *Limnaea stagnalis* m. *scalariforme*, ascribed to Taylor, was also first published, under the same name, by the writer in 1884. All this confusion appears to be due to the idea that what was not known to the members of the Conchological Society who compiled their official list of Land and Freshwater Mollusca has no existence. If Mr. Adams will spend a few weeks looking up the literature in one of the big London libraries, he will see how far this is from being the case!

Mesilla, N.M., Oct. 28, 1895.

T. D. A. COCKERELL.

To cook Snails.—"Snails à la Bourguignonne."—Snails fed on vine-leaves are the best, and should be brought in alive. Keep them without food for a few days, then put them into a bowl with a handful of bran and a little vinegar to remove the slime. Wash them in several waters and place them in a saucepan with a handful of salt and some cold water, a bunch of fennel and two bay-leaves. Cover the saucepan and cook them gently for five or six hours. Remove the shells and take out the gut, and again wash in cold water. Pound two or three anchovies, and when reduced to a paste add 4 oz. of fresh butter, six sprigs of parsley, six shallots and two cloves of garlic (parsley, shallots and garlic all finely minced), a pinch of salt, a pinch of white pepper, and two pinches of cayenne. Add to these, when well mixed, a small quantity of good gravy (made from veal, if possible). Mix well. Put a small quantity of this forcemeat into each shell, then replace the snail. Pour over it a little butter, and lay carefully on a tin and bake for 8 to 10 minutes in a hot oven. Serve very hot. The common garden snail is probably quite as good, although not so large.

FLORENCE STEPHENSON.

EDITOR'S NOTES.

This number completes Volume V. of the JOURNAL OF MALACOLGY, and the Editor has pleasure in thanking the Editorial staff and the contributors generally for the work which they have done for the JOURNAL in the past year.

December 31st, 1895.

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GEORGE H. CARPENTER, B.Sc.,

AND

R. LLOYD PRAEGER, B.A., M.R.I.A.

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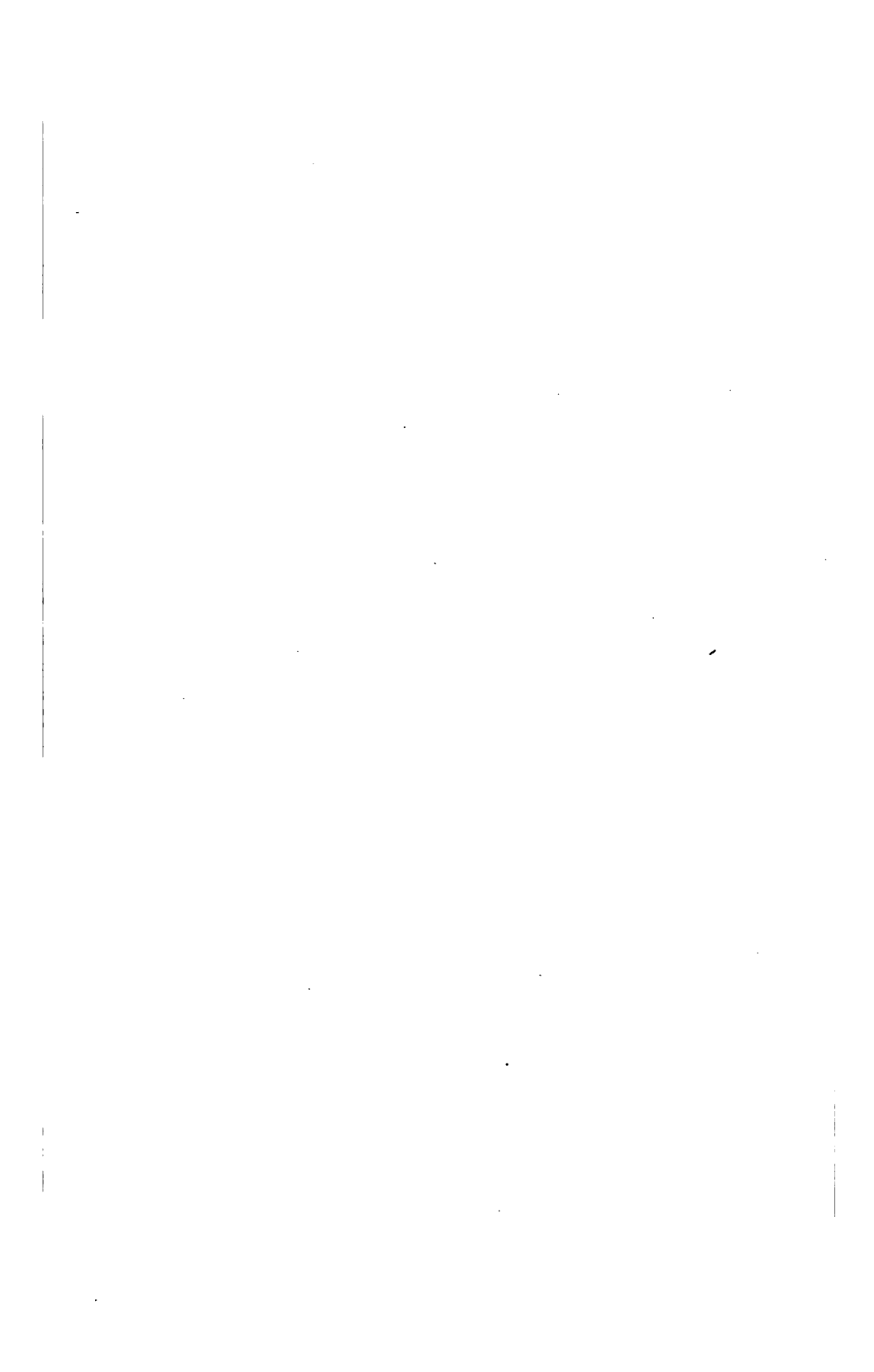
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